



MYRMECIA

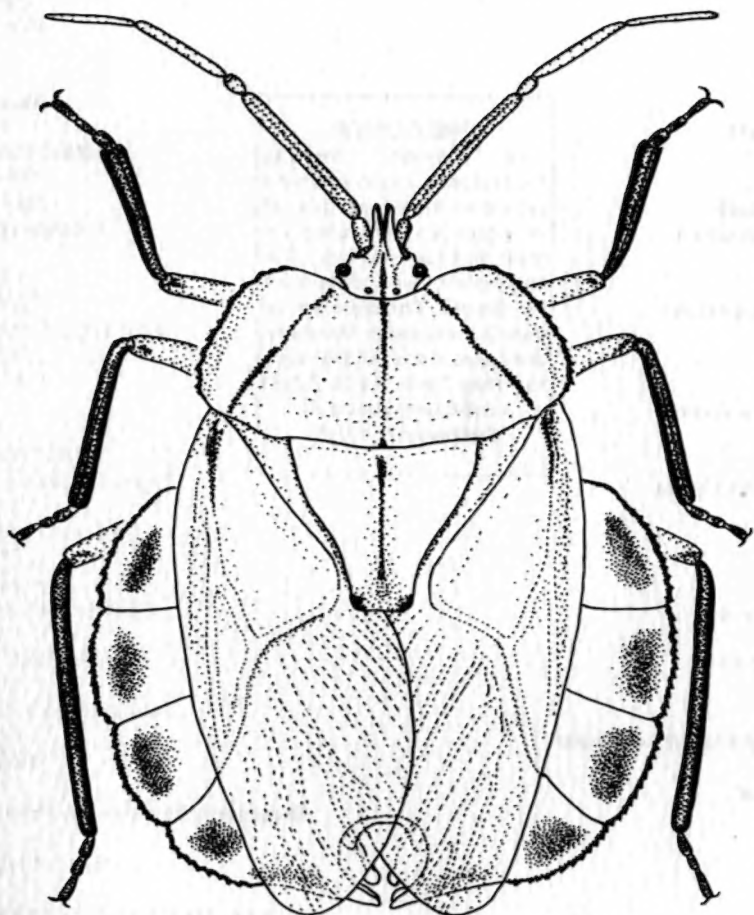


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members of the Conservation Committee.

THE COVER
The cover depicts
Peltocopta crassiventris
provides maternal care of
its eggs and nymphs for
their first two instars. The
illustration was prepared
by **Geoff Thompson** of
the Queensland Museum
and was used in the logo
for the 29th AES AGM
and Conference in
Brisbane in 1998.



MYRMECIA



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NOTICE

Statements made in *Myrmecia* do not necessarily represent the views of the Australian Entomological Society. Items printed herein should not be reproduced without permission of the author of the material.

COPY DEADLINE FOR NEXT ISSUE

Material for publication in the February 2000 issue of *Myrmecia* will need to be in the hands of the Editor by **Friday 21 January 2000**. All material should arrive by e-mail to laurence@ento.csiro.au; if this is impossible, fax to 02 6246 4264.

EDITORIAL

This is the last AES News Bulletin issue of the year, indeed of the Millenium! Moreover, it is the first issue of the post-Murray Fletcher era. As the new editor, I expect to introduce a few changes, depending on the comments and advice that I receive from you, either directly to my e-mail address or through Tish Silberbauer or Bill Palmer who will be helping to produce future Bulletins. This November issue has involved a great deal of rapid learning, because the title 'News Bulletin Editor' is a grandiose euphemism. The job actually involves a wide range of duties, from commissioning editor, picture editor, proof reader, and general manager, to typist and compositor. Fortunately, Peter Cranston's son, Andrew, who did such excellent work preparing the Programme for our 30th Scientific Meeting last month, steered me through the wonders of Pagemaker and thus got these words and pictures onto paper. We are all in Murray Fletcher's debt for the quiet way he has handled this range of duties for so many years.

But what words do you want in your News Bulletin? Tish, Bill and I need to hear from you; advice, comments, criticisms, suggestions...all will be welcome. We are working on one or two new initiatives, but we cannot implement these until next year. This issue has had to be produced within a week, that being the period between Murray's returning from Europe to hand over to me, and our printer's deadline. Even that involves logistic problems, because I am in Canberra and our

excellent printer, Craig's, is in Orange. And mailing anything to rural NSW contrasts sharply with my memory of Africa in my youth, when a runner with a cleft stick always arrived on time! But some matters for you-all to ponder.

1. Does anyone out there have any views on entomology in Australia suitable for publication in "Letters to the Editor"?
2. Recent publications on entomology – please draw anything to our notice that you consider interesting, so that we can prepare book notices or reviews.
3. Tish has started a series to list and comment on interesting insect web sites; please let her have your comments and the addresses of any sites that you have found useful.
4. In addition to the usual 'Councillors' reports, we hope to include progressively more extensive reviews of matters entomological in various institutes around Australia, to give us all a broader appreciation of the diversity of insect studies going on around us. Bill will be taking this under his wing.
5. To further stimulate discussion we hope to solicit a series of articles from interested parties around Australia on contentious issues involving entomologists, ranging from education to genetic modification of crops.
6. And what of the future of entomology in Australia? Much of it must be in the hands and heads of our PG students. Hopefully future issues of Myrmecia, and also the next Scientific Meeting at Darwin, can find ways of helping these younger scientists to take a stronger part in the Society's affairs.

But of one thing we are quite sure. It is your Society, and your News Bulletin. So our question is, in what ways can we convince non-members and potential members of the current vitality and excitement of entomological science in this great continent, and of the part that the Society has to play in such activities?

MYRMECIA AND THE WEB

You will note that in their Report given below, the Society's Executive state firmly that "eventually Myrmecia will become a primarily web-based newsletter...". My impression around the sticks is that this opinion is not universally shared, and that many of us actually like the booklet as we know it - MZ alone expressing enthusiasm at the thought of going to bed with his computer! Therefore, as discussed by Murray Fletcher in his report given below, we will

try to coordinate progressively hard copy with electronic copy, and Murray will take care of the latter. These two methods of information dissemination seem to many of us to serve rather different purposes. Advertisements for meetings, addresses, membership application forms, even colour photographs – these are all very efficiently found on the Web. In contrast, articles that you want to read at your leisure, whether in bed or on the 'bus, and possibly refer to in 12 months time, these are useful to have in booklet form. So we will take Myrmecia in these two different directions, so long as it remains financially viable, but again we look forward to hearing from you with your ideas and opinions.

LAM

WWW-SPINNERS

There is a wealth of entomological resources on the world wide web; something to appeal to every enthusiast. This article will list a small selection of web sites divided into institutional sites, taxon-specific sites, job-related sites, journals and societies sites and an "other" category for sites that aren't easy to pigeonhole.

Institutional sites

CSIRO Entomology: <http://www.ento.csiro.au/>
This site contains a guide to what's going on in CSIRO Entomology: the research, documentation and publicity, products and services, job vacancies, and commercial & other business opportunities.

Transvaal Museum: <http://www-tm.up.ac.za/entom/ento.htm>
Entomology is a small department (three people, as far as I can tell) in the Transvaal Museum at Pretoria, South Africa. It has some lovely South African entomology links, including the Ent. Soc. of South Africa and appealing sites like "yukky bugs" and the Big 12 African Insects page.
Agriculture Western Australia:

<http://www.agric.wa.gov.au/ento/>
To those of you who picked up a copy of the free CD-ROM from the conference, this home page will look very familiar. The page includes: pests (pestfax, pestweb, updates and identification), the collection (and the facility to view the insect collection database (ICDB) specimens), projects (stored grain, forensics, screensavers), staff, request the free EntoCD (CD-ROM), discussion webs (participate in online discussions about general insect pests and stored grain insects), free screen saver, and access to a wide range of entomological addresses worldwide.

Natural History Museum, London:

<http://www.nhm.ac.uk/entomology/> This page describes the resources and functions of the Department of Entomology. The site contains general information on the Department, its collections, staff and research, including molecular systematics, biomedical sciences, collections management, and links to other sources of information including funding for study visits - an excellent attempt to make taxonomists interesting!

Taxon specific sites

Lepidoptera : <http://linus.socs.uts.edu.au/~don/larvae/larvae.html> Don Herbison-Evans and Stella Crossley's page of links to images, and descriptions of biology, behaviour, and life histories of 876 Australian Lepidoptera species including 406 with caterpillar pictures.

Termites: <http://www.utoronto.ca/forest/termite/termite.htm> Urban Entomology Program, University of Toronto. This site includes research areas (termite biology, termite taxonomy, termite phylogeny, termite control methods, and beneficial uses of termites), a guide through the termites of the world (genus and species lists and distributions), a feature on the illustrated termites of North America, and a good list of other termite resources.

Fireflies: <http://iris.biosci.ohio-state.edu/projects/FFiles/> An American site on lampyrid beetles. The site is divided into firefly facts, resources and firefly fun (information on attracting fireflies). The site appears to be aimed at the general public, so has a fairly simple layout and information content.

Job sites

General entomology: <http://www.colostate.edu/Depts/Entomology/jobs/jobs.html> This site seems to be updated regularly (at least weekly) and, although oriented to the US job market (it is maintained by Colorado State University), it a great bookmark for those searching for potential jobs. It also has a list of other job sites at the bottom of the page.

Nature: <http://www.nature.com/> This is the site for the journal *Nature* and has a huge list of jobs that are updated weekly (on a Thursday afternoon our time). You need to register to see the news items, but don't have to register to troll through the job advertisements.

New Scientist jobs section:

http://www.newscientistjobs.com/frame_loginset.html This site is also updated

weekly and has a large number of jobs listed. It is possible to search for jobs using keywords, which makes the process a bit more streamlined. You'll need to register the first time you use this site, but registration is free. You can also look at a good deal of each issue's contents for free on the web by going to <http://www.newscientist.com/>.

Journals

Myrmecia: <http://www.agric.nsw.gov.au/Hort/ascu/myrmecia/myrm353.htm> Our own newsletter on the internet. This site has been set up by Murray Fletcher and shows the most recent edition of *Myrmecia*.

Florida Entomologist: <http://www.fcla.edu/FlaEnt/fehmpg.htm> An excellent resource in this day of diminishing library budgets! The entire journal is available on the web and it's possible to download articles and abstracts and save them on disc or print them out. It is also possible to search through previous editions of the journal.

Societies

Victorian Entomologist: <http://home.vicnet.net.au/~vicento/vicent.htm> It contains sections on what's on (meetings, lectures, field excursions, recent articles), education, awards, how to become a member of the society, what's new on the home page, conservation of insects, insect distribution maps, and links to other entomological societies and web sites.

Entomological Society of South Africa: <http://www.up.ac.za/academic/entomological-society/entsoc.html>. It contains sections on society information, membership, a list of insect collectors in southern Africa, the electronic version of their newsletter *Rostrum*, information on their journal *African Entomology*, details of their conferences and links to entomology web sites.

The Lepidopterists' Society:

<http://www.furman.edu/~snyder/snyder/lep/index.html> It contains sections on history and scope, annual meetings, publications (News of the Lepidopterists' Society and Journal of the Lepidopterists' Society), becoming a member, executive council, internet resources, statement on collecting and season summary.

Others

Australian Entomological Supplies:

<http://www.nor.com.au/business/austento/> If you're like me you can never find your Aust Ent Supplies catalogue when you need it. This web page takes the some of the angst out of it. The

sites has a catalogue index with pictures of items, order numbers, prices with and without sales tax and a brief description, in short everything that's in the hardcopy catalogue. It also has a book list, a new items list, ordering details and contact details. Doug Yanega's home page: <http://insects.ucr.edu/staff/yanega.html> Follow the links from his home page to Doug's list of curious scientific names. You can also find entomology links, ecology & biodiversity links, reference links, anti-spam stuff, and search engines & indexes.

There are also a number of newsgroups and any number of email lists devoted to entomology. The newsgroups include `sci.bio.entomology.misc`, `sci.bio.entomology.lepidoptera`, `sci.bio.entomology.homoptera`, `bionet.drosophila`, `sci.agriculture.beekeeping`. There are any number of listservers. A good list, with subscription information, can be found at <http://www.colostate.edu/Depts/Entomology/listserv.html>. Please email me at tsilberb@metz.une.edu.au if any of these links are dead. Also, if you have any favorite web sites, please contact me and I'll do my best to list them in the next edition of *Myrmecia*. [LAM's favourite search engine is "google.com"]

Tish SILBERBAUER

REPORT FROM ORGANISING COMMITTEE 30TH AES CONFERENCE, CANBERRA

Your Society's Annual General Meeting and Scientific Conference was held 28 September to 2 October 1999 in Canberra. The Federal Capital turned perfect Spring weather for the conference, fine the first day (for the photo), wet the next two days (to keep those prone to wandering from the conference) and fine for the BBQ day. [Then it poured the next day, and we had our average monthly rainfall in one day].

As convenor I was privileged to have an organising committee comprised of Drs Jane Wright, Jim Cullen and Graeme Hamilton. There was a convention organising company hired to assist with the process (Australian Convention and Travel Services, Annette Palm for the first six months, Denise Tart for the last 3 months). All the committee meetings were enjoyable with much merriment and rapid fire decision being made, much to the astonishment of Annette Palm. One very memorable meeting was the creation of the design for the t-shirts, jackets, mugs and bag. We sat in a room with scissors, photocopies of the logo and

sticky tape then mucked about until the design was done, accompanied by much hilarity. We ended up with a design that had delegates from other conferences in town coming to purchase the t-shirts and jackets.

A special mention must be given to the tremendous effort by Pete Cranston and his son Andrew, who organised the timetable and abstracts. Without their diligence and hard work we would not have had a conference. David Rentz is thanked for trusting the conference committee with the slide of the cockroach that was the logo. He also provided the description and wording that went into the conference handbook about this species. There were several unusual features incorporated into this conference. The final session was given over to Entotainment – the non-scientific use of insects which included May Berenbaum, guest speaker from the USA, an entomological shopping spree and entomological film (*Microcosmos*). The inspiration and driving forces behind this Entomological extravaganza were Kirsti Abbott and Martin Dillon. Two guest speakers of particular note were May Berenbaum from Illinois, who informed and delighted delegates, and Bill Roberts (Australia's Chief Plant Protection Officer), who presented the plenary lecture for the Quarantine session less than 24 hours before leaving to go to Rome for 3 months. Both efforts deserved all our thanks.

The five special symposium organisers (Laurence Mound – Arid Zone Ento; Geoff Clarke – Insect Conservation; Myron Zalucki – Education; Paul DeBarro – Biological Control; Quarantine – myself) created an extremely interesting and diverse program. The primary theme of the conference was "Insects in the Australian Environment"; this was explored through the dominant environment in Australia (arid); saving the threatened ones (conservation); keeping the unwanted ones out (quarantine); deliberate introductions (biological control) and preparing for understanding in the future (education – if it survives).

It was a very successful conference. It was relaxed and informative with plenty of opportunities to catch up with old friends. The social highlight of the conference was the conference dinner at the Boathouse by the Lake, where delegates were buzzed by giant bees and serenaded with entomological songs. Entertainment was provided by a Bunch of Posers, much to the embarrassment of Alison Roach who discovered on the night that her older brother was part of the entertainment.

A tour with a difference concluded the conference. Delegates had the opportunity to unravel what lies

behind the edifice of CSIRO Black Mountain ending in a typical Aussie BBQ in the magnificent setting of Black Mountain. Thanks are given to Graeme Hamilton and the CSIRO social club for cooking the BBQ.

The conference was modest in size (169 delegates) returning a small profit. To end I wish to thank Jim Cullen and Jane Wright their support and for doing the majority of the verbal duties at the conferences. All of the organising committee enjoyed putting together this conference and thank the members of the Australian Entomological Society for making it such an enjoyable success.

Glynn MAYNARD

ILLUSTRATION WINNERS

Photography

Colour: Heather Proctor, Griffith University, "Emerging Dragonfly"

B & W: Chris Palmer, Zoo & Ent, UQ, "SEM – Setae of *Corops seminiger*"

Illustration

Colour: Hannah Finlay, Coogee NSW, "*Chrysosoma splendens* (male)"

B & W: Rebecca Robinson, Newcastle NSW, "Scarab beetle"

POSTER WINNER

The range of poster presentations at Canberra was highly diverse, from pages of typescript to very glossy productions. The judges impression was that the standard continues to improve, partly due to improved technology but also due to more careful thought about the objectives of a poster. We concluded, however, that many of the presentations tried to do too much, often using too many words. A fine example of this was the one on domestic disputation by thrips in the arid zone – the illustrations were excellent (I did them myself using Automontage software!), but criticising it in competition with the best of the other posters we realised that David Morris and Laurence Mound had presented a mini-paper in the form of a poster.

Certainly it was attractive, well balanced and informative, but it lacked the clarity of message of the poster by Albert Basta & Robert Spooner-Hart on the use of a plant extract against mites and thrips. However, the carefully designed simplicity of the unanimously chosen winning contribution stood out from the rest of the field. Ruth Huwer, Liz Brooks, Eric Hines & Tim Woodburn presented information on crown weevils inducing spineless nodding thistles. This was in great poster style, using the minimum of words to convey their facts, visually nicely balanced (we forgave their horrid violent colours!), with excellent use of leader-lines to draw attention to details so that a clear message was delivered quickly. Looking at their poster I realised how much the rest of us still have to learn about delivering to other people the few essential points of general interest in data we have generated with such effort and cost.

LAM

DINAH'S DELIGHT

The outright winner of this year's (un-announced) Limerick competition is, of course, Dinah Hales, who submitted this pair of masterpieces that are well up to her usual standard. The logo of the 30th AGM was the arid zone cockroach, *Polyzosteria mitchelli*, a species with large clear windows in the margins of its thoracic segments. The function of the clear windows is unknown, according to the conference flyer, but Dinah has a suggestion.

A *Polyzosteria* lass

Said: "You ask why these windows of glass?

I can pull in my head

And pretend to be dead,

And still see who's approaching my arse."

If your taste runs more to urban pest management, you might prefer to appreciate *Polyzosteria* like this:

Now *Periplaneta* we hate,

For *Blatella* we're putting out bait,

But *Polyzosteria*

In the wisteria

Is something we should celebrate.



Jane Wright and May Berenbaum discuss the taste of witchety grubs?



Alan Yen, Heather Proctor and David Walter relaxing after a hard day giving talks and reports.

DINER'S DELIGHT

The Society Dinner this year was entertained by a group of elegantly dressed singers (could they have been 'the drones'?), accompanied by an accordion and a very fine fiddle. As they progressed around our tables they were heard (over the babel of stridulating entomologists) to sing the following. The first was sung to the German national anthem tune, but is far better to the lilt of Cwm Rhonda:

Let us sing a song of insects
Bugs that squirt and itch and bite.
Bugs with hairy legs and bottoms,
Falling on your face at night.

Let us sing of entomologists
Creeping up on little flies,
Pulling off their legs and penises
Just like they did when they were five.

Another was a resounding round, sung to Frere Jaques:

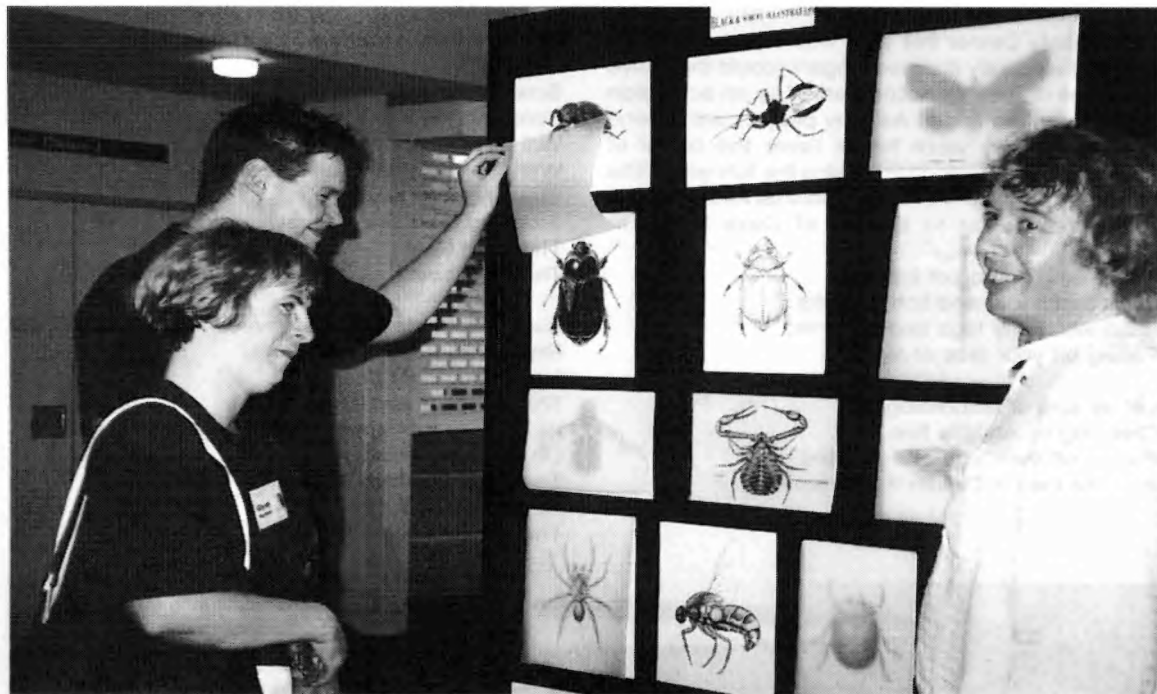
Screwing insects,
Screwing insects
With a pin,
With a pin.
Studying their sex life,
Studying their sex life
They can't win,
They can't win!

But the following words gave a new slant on Paul Revere from Guys and Dolls:

I got a bug right here
That's lookin' awful queer,
Its got a great big back and antlers like a deer.
Oh Oh, who knows,
The order in which it goes?
Hey hey, who'll say
That family Lucanidae...



Ian Naumann, Kylie Anderson and Jim Cullen admire Penny Gullan's camera technique?



The people who made the programme happen at Canberra: Glynn Maynard, Peter and Andrew Cranston.

But they did not include this editor's favourite – to
Twinkle twinkle little star:

Fringe winged flies are kind of neat,
With tiny eyes and big bladder feet.
Just one mandible
makes it hard to eat,
But two grooved laciniae
suck up all that's sweet,
Virus vectoring's another little feat -
Just a few reasons why I find thrips great!

And if anyone has access to a copy of the late Tom
Kirkpatrick's anthology of entomological ditties, used
to instill basic entomology into agriculture students
in Trinidad in the 1950's, the editor would be pleased

to know. The only couplet retained in memory after
40 years concerned the mating habits
of dragonflies:
And so they fly in tandem fashion,
Which merely serves to increase their passion.

31ST CONFERENCE & AGM

Our next Scientific Conference and AGM is planned
to be in Darwin, starting on Sunday June 25
(Registration and welcome drinks) until Friday June
30. A tour is scheduled for all day, Wednesday 28.
Please ensure that this reaches your diary, and bear
in mind that bringing forward the date of the meeting
will have complications for preparing
Reports for the year.

ANNUAL REPORT 1999

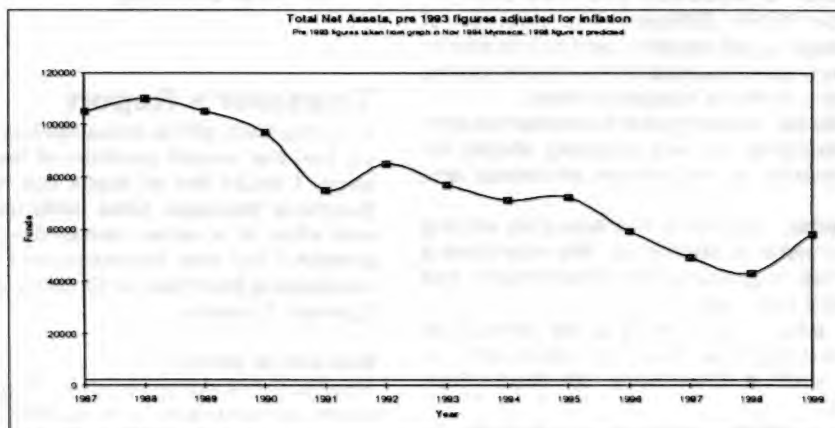
EXECUTIVE REPORT

The Core Executive (Meron Zalucki, Dave Walters, Veronica Brancatini, ± Peter Allsopp & Jim Cullen) met 6 times so far in 1999, often with the Assistant Secretary (Heather Proctor) and local Regional Councillor (Tony Clarke) to conduct the day-to-day business of the Society, pay bills, deal with correspondence, Journal matters and *Myrmecia*. We'd like to acknowledge our appreciation to Heather Proctor for her excellent note-taking when she was able to attend, and to Jim Cullen, Peter Allsopp, and Tony Clarke for taking the time to attend when they were at UQ.

The *annus horribilis* of Entomology at the University of Queensland has had an extremely disruptive effect on our abilities to carry out the duties of our offices. We apologise for our lapses, but we have been doing what we could. In particular:

Non-financial members. We have taken an aggressive approach to expelling members who have failed to pay their dues for several years. This was a difficult decision to make, but a necessity given our finances and our obligations to Blackwells.

GRAPH 1



GRAPH 2



Stop journal. Finances finally seem to have turned around. We would like to see this trend continue without the need for raising dues. The best way to achieve this goal is if members pay their dues promptly. Currently, we are required to send the Journal and *Myrmecia* to a non-financial member for a year (exclusion after two years). We would like to change the Constitution so that we can stop sending these items if the dues are not paid on time. In practice, this would mean that the first issue would be sent, and a hold placed on the second and subsequent issues. We think this would encourage tardy members to pay up.

Officers. Quite a few positions among the officers of the Society needed replacement this year, and we are happy to be able to announce that most of the positions have now been filled. We'd especially like to thank Laurence Mound for relieving Murray Fletcher as editor of *Myrmecia* and Mike Lenz for agreeing to be Public Officer. The position of Business Manager is still vacant – and its role needs to be revised as a consequence of Blackwells having taken over many of these responsibilities.

Member database, updating and maintenance also need to be reconsidered, and probably should be done by Blackwells for maximum efficiency and speed.

Mackerras Medal. Thanks to Pat Marks for stirring the pot with her letter in *Myrmecia*. We now have a formal committee, a growing pool of nominees, and expect an award next year.

Society Web Site. This needs to be formalised and supported by the Society, probably in association with a Directory of Australian Entomologists.

***Myrmecia* on the Web.** Although we will continue with hardcopies for the time being, eventually *Myrmecia* will become a primarily Web-based newsletter – with all the advantages in cost, currency, inclusiveness, and inter-activeness that comes with using the Web.

International Congress of Entomology.

The ad hoc committee for the 2004 ICE bid consists of:

Geoff Allen (TAS)
Jonathan Majer (WA)
Alan Anderson (NT)
Andy Austin (SA)
Tim New (VIC)
Murray Fletcher (NSW)
Jim Cullen (ACT)
David Yeates (QLD)

Brisbane is the host city and the BVCC is the proposed venue. The Executive believes that holding the ICE in Australia would be a great boost to entomology nationally and regionally. We hope that the members will continue to strongly support the bid and put their hands up for organising tasks if we are successful.

The bid has been lodged with the ICE committee, but many things remain to be done, including:

1. Preparing the bid documents
2. Demonstrating that the Society has the capacity to organise and mount the Scientific Sessions.
3. Demonstrating strong regional support for the ICE.
4. Presentation of the bid at ICE 2000, Brazil.
5. Promotional material, including on-line directories, plans, venues, etc. (including personal contacts).

David WALTER
Secretary

Treasurer's Report

As in the past, all the accounts have been combined so that the overall position of the Society can be seen. I would like to thank our recently departed Business Manager Mike Jefferies for all his time and effort in a rather demanding role. I also am grateful for the assistance I have had with databasing from Manon Griffiths, Kylie Galway and Carmen Coombs.

BALANCE SHEET

The Society's accounts for 1998 have only recently been submitted to the auditor and so are not available. Once the auditor's report has been completed it will be published in *Myrmecia*. The Balance Sheet presented below is therefore only a draft and there may be an adjustment after auditing. The audited financial statements for 1997 were not presented at the 1998 AGM but are now available.

FINANCIAL POSITION

(see Table 1)

As expected there was no improvement to the Society's financial position in 1998. It was once again necessary to draw on the Society's term deposit of \$10,000 in order to meet the shortfall between income and expenditure for. This was due in part to:

1. Losses incurred from the pre Blackwells Journal. Members were obliged to prop up the journal once more with \$7000 transferred to Blackwells to cover subscriptions that we

held from institutional subscribers. This is a legacy from the pre Blackwells journal's spiralling cost to the Society.

2. Losses incurred due to non-payment of subscription by now excluded members or members who tender late resignations and are not financial when they leave. These individuals cost the Society \$8417.50.

For the first time in my position as Treasurer I am pleased to say that the Society's financial position has improved in 1999. For the first time since 1995 our Total net assets have increased (Graph 1). This is due in part to the improvement in payment of membership, a reduction in non-financial members, a higher than expected profit from the 1998 AGM (\$12 000) and no increase in costs associated with the Journal. As well our membership has stabilised at just over 700 (Table 2, Graph 2).

JOURNAL & BULLETIN

Financially the arrangement with Blackwells is working well. The cost to the members has remained around \$33, 000. The pre Blackwells journal cost members approximately \$50 per member to produce in 1997. In 1998 Blackwell charged the Society \$46 per member for 727 members. In 1999 this should have dropped to \$45

per member, but unfortunately we have been charged for 750 members not the 705 which we currently have. This is due to those members who resign after the membership list has been sent to Blackwells in February, but who do not pay for their subscription even though they may have received up to 3 issues. We are also currently carrying another 50 members who have not responded to either e-mail or written requests for payment and will be removed from the membership lists from January 1 pending exclusion.

IF YOU HAVE NOT PAID YOUR SUBSCRIPTION PLEASE DO SO NOW.

SUBSCRIPTIONS

Subscription rates remain at:

Full members & Affiliated Societies \$60 (\$5 discount if paid by 1 Jan 1998)

Retired & Student Members \$27.50 (\$5 discount if paid by 1 Jan 1998)

Joint members \$65 (\$5 discount if paid by 1 Jan 1998)

Sustaining Associations \$200 - \$500

News Bulletin only \$20 (no change)

Membership was due and payable on 1 January 1999.

Veronica BRANCATINI
Hon Treasurer

Table 1

AUSTRALIAN ENTOMOLOGICAL SOCIETY INC.

GENERAL ACCOUNT (CBA 5125 1002 3500)

As of 31/8/99

INCOME

	1996	1997	1998	1999
26th AGM & Conf (1995)	\$1,561.93	\$0.00	\$0.00	\$0.00
27th AGM & Conf (1996)	\$0.00	\$0.00	\$0.00	\$0.00
28th AGM & Conf(1997)	\$0.00	\$0.00	\$4,832.00	\$0.00
29th AGM & Conf(1998)	\$0.00	\$0.00	\$0.00	\$13,020.00
Advertising	\$1,015.00	\$610.00	\$1,340.00	\$0.00
Donations	\$10.00	\$5.00	\$0.00	\$0.00
General sales	\$28.00	\$1,070.00	\$182.00	\$50.00
Interest	\$722.55	\$296.20	\$122.91	\$88.44
Misc. reimbursements	\$9.00	\$332.00	\$0.00	\$79.06
Subs 95	\$200.00	\$480.00	\$0.00	\$0.00
Subs 96	\$13,304.72	\$3,454.50	\$820.00	\$0.00
Subs 97	\$15,640.00	\$14,963.50	\$2,902.50	\$0.00
Subs 98	\$500.00	\$11,792.50	\$21,847.50	\$1,020.00
Subs 99			\$14,533.00	\$17,104.20
Tax refund				
TOTALS	\$32,991.20	\$33,003.70	\$46,579.91	\$31,361.70

EXPENDITURE

AGM (1996)	\$813.00	\$0.00	\$0.00	\$0.00
AGM (1997)	\$1,000.00	\$3,990.00	\$0.00	\$0.00
AGM (1998)	\$0.00	\$1,250.00	\$0.00	\$0.00
Auditor	\$0.00	\$0.00	\$850.00	\$850.00
Conservation Committee	\$0.00	\$0.00	\$0.00	\$0.00
Donations	\$0.00	\$0.00	\$0.00	\$0.00
Editorial assistance	\$5,736.75	\$7,084.85	\$8,533.86	\$6,300.00
Executive costs incl transfer	\$1,162.61	\$729.00	\$0.00	\$0.00
Executive travel	\$1,000.00	\$500.00	\$440.00	\$0.00
FASTS subs	\$1,345.50	\$1,345.50	\$0.00	\$1,345.50
Prizes awarded at AGM	\$3,653.20	\$1,350.00	\$1,000.00	\$0.00
Journal/Business Man. costs	\$15,603.00	\$17,608.00	\$15.00	\$0.00
Membership forms	\$84.00	\$828.24	\$609.00	\$678.00
Membership survey	\$87.10	\$538.05	\$0.00	\$0.00
Misc taxes, charges	\$60.99	\$688.81	\$818.42	\$933.36
Myrmecia	\$8,200.91	\$9,190.04	\$2,334.28	\$0.00
Research grants 95	\$1,000.00	\$0.00	\$0.00	\$0.00
Research grants 96	\$2,930.00	\$0.00	\$0.00	\$0.00
Student prize	\$1,625.00	\$0.00	\$0.00	\$0.00
poster	\$0.00	\$1,286.00	\$0.00	\$0.00
Blackwells*			\$42,950.00	\$31,911.52
TOTALS	\$44,302.06	\$46,686.54	\$57,550.56	\$42,018.38

GENERAL ACCOUNT (CBA 5125 1002 3500)**2. Term Deposit**

Current balance	\$65,738.30	\$59,650.52	\$53,274.49	\$45,073.93
Interest, reinvested	\$4,100.00	\$3,303.00	\$2,156.07	\$1,844.69

Table 2

MEMBERSHIP 1999

Membership of the Society as of	9-Sep-99	27-Sep-98	26-Sep-97	31-Jul-96
Full Members	493 497	546	589	
Student Members	88	91	94	100
Retired Members	94	90	100	90
Joint Members	16	16	11	9
Honorary Members	6	6	6	6
Affiliated Societies	3	3	3	3
Sustaining Associates	5	2	4	5
TOTAL	705	705	764	802
News Bulletin Only	15	13	9	12

There were 25 resignations from the Society

Although there has been a decline in membership since the peak of 856 in 1993, numbers have now stabilised at around 700

With canvassing there has been an increase in sustaining associates to the current 5

They are: Rhone-Poulenc Rural Australia P/L
Novartis Crop Protection Australasia Ltd
Bugs for Bugs (Integrated Pest Man. P/L
Monsanto Australia Limited
Australian Entomological Supplies

Chief Editor's Report

Feedback regarding the new cover and page design has continued to be uniformly positive. 1999 saw the second of our 'feature' covers using Otto Fahey's drawing of the gonipterine weevil *Gonipterus scutellatus*.

Production

Production statistics for the *Australian Journal of Entomology* since the previous AGM were:

Volume	Part	Published	Pages	Papers	Reviews
37	4	18 November 1998	103	12	3
38	1	25 January 1999	50	8	6
39	2	4 May 1999	107	18	5
38	3	30 July 1999	88	13	1

During the same period (September 1998-August 1999), the flow of manuscripts was:

Manuscripts received	70
accepted	60
rejected/withdrawn/lapsed	10
with Technical Editors at 30 August	64

The number of manuscripts received during the year was similar to that received in previous years. Acceptances fell behind during the later part of 1998 (hence the small size of Part 1), but picked up in 1999. Volume 38 Part 4 (due out in November) will be a large issue with 19 papers and 5 reviews. We are proud to advertise a period of no more than 6 months from acceptance of a manuscript to publication of the paper.

Circulation

Subscription agents worldwide are reporting continuing pressure on library budgets in all markets. Global non-renewals are between 3 and 7%, while cancellation rates from the academic libraries sector in Australia are as high as 10%. Against this background, the strong levels of renewals to the *Journal* are encouraging. In 1998 the actual distribution of the *Journal* was 906, with budget predictions for 1999 of 970. The *Journal* goes to subscribers in 28 countries.

The total royalty payment to the Society for the 1998 volume, comprising 8% of all non-Society revenue, was \$3239. The cost of the *Journal* to members was \$46 for the 1998 volumes of the *Journal* and *Myrmecia*.

Electronic initiatives

The major new initiative for the *Journal* has been its availability through *Synergy*, Blackwell Science's new electronic delivery system. Abstracts will be free of charge, and optional full-text online subscriptions will be available to Society members for a fee of US\$20. *Synergy* allows full-text searching across entire articles, a table-of-contents e-mail alerting service and a network of reciprocal links to other articles referenced within the text which will be extended out to bibliographic databases and other Web-based services. A free trial of the service is available by registering at www.blackwell-synergy.com. Blackwell Science's policy on online subscriptions is to offer the online version at 90% of the paper subscription, and both for 110% of the paper subscription.

The *Journal's* home page (www.blackwell-science.com/products/journals/aen.htm) has had increasing numbers of 'hits'; 105 in January, 183 in February and 265 in March. Most accessed information on the aims and scope of the *Journal* and the table of contents.

Promotion

Blackwell Science aims to gain new and retain current subscribers, raise the profile of the *Journal*, and increase submissions to the *Journal*. They have targeted exhibitions at relevant major conferences and meetings (at least 15 scheduled for 1999), direct marketing through promotional material, especially in Europe, North America and East Asia (>6000 subscription agents and institutions), and through advertising in other Blackwell Science journals. All

corresponding non-member authors are sent a free copy of the issue in which their paper appears and a letter offering an introductory discount of 25% on subscription. This offer is extended to their co-authors, colleagues and affiliated institutions.

Acknowledgements

Alan Andersen, Alan Bishop, Ken Walker and Tony Wapshare continue to give excellent service to the society as Technical Editors. The editorial assistance of Jenny Allsopp and the input of Mandy Naylor and the production team at Blackwells have been vital in the smooth running of the journal and in meeting production schedules. I thank them all. I also thank the Editorial Board and the referees who have given expert opinion on manuscripts. The technical editors and I certainly appreciate their timely response, but encourage tardy referees to respond more quickly or inform us that they can not complete the request within a reasonable time. This year we will formally thank referees with a listing of their names in Part 4.

As I said last year, the executive sees the *Australian Journal of Entomology* as THE place to publish Australasian entomological research, and wants it to be recognised as one of the big entomological journals world wide. A journal can only be as strong as the quality of the manuscripts submitted. I encourage the submission of many more high-quality research and especially review manuscripts from members in the future.

P.G. ALLSOPP
Chief Editor

News Bulletin Editor's Report

Up until August this year, the News Bulletin faced a serious crisis. Having notified the Society at the AGM in 1998 that I would not be available for reappointment from 1999, a search for a replacement began. We had no success until August when no fewer than three volunteers came forward from the membership and I am sure all members are pleased that the printed version of *Myrmecia* will be able to continue for yet another year at least. The new Editor, Laurence Mound, brings considerable experience to this job, both in Entomology and in editorship of scientific journals. I will provide whatever assistance I can in transferring production from Orange to Canberra and hope that production glitches can be kept to a minimum during the transfer process. Having said that (and not wanting to pre-empt any plans Laurence may have for *Myrmecia*), I think it is time that the Society seriously considered

transferring some of the traditional content of *Myrmecia* to a web-based format. The draft electronic version that has been available on the ASCU website since early August demonstrates some of the advantages of this form of publication, particularly for sections such as Coming Events, Electronic News and Society Notices. Web versions of these sections are easy to produce, can be adorned with full colour logos and photographs, can be updated as necessary without having to wait for the next issue of the News Bulletin and can incorporate direct links and email links to other web pages, organisers or publishers. It will also be possible to publish the photographs appearing in *Myrmecia* in full colour. This will be most useful for conference photographs that have never reproduced well in the printed version. For example, the group photo taken at the Brisbane conference in 1998 was available from the Society's web page at the University of Queensland and looked much better in colour than the version printed in *Myrmecia*. Over time, I would like to see sections more suited for web publication omitted from the printed version of *Myrmecia* altogether so that *Myrmecia* becomes a news bulletin only again. The Coming Events section has always been the most difficult to produce in printed form and moving it to a Society web page will reduce the load of the News Bulletin Editor and make a significant reduction in the cost of printing. I have offered my services as an Assistant News Bulletin Editor both to provide Laurence with support and to maintain a web page covering these sections, if the Society decides to go this way.

Over the last twelve months, four issues have been produced with a total of 115 pages. The bulk of this, as always, has been the reports submitted by Regional Councillors who continue to provide informative and entertaining reading on the activities of entomologists around Australia. I have not been as effective as I would have liked in getting reports from our overseas correspondents and from the affiliated Societies and I hope Laurence is able to improve this situation. Changes in the management of FASTS has also meant that the monthly news reports on FASTS activities have been replaced with press statements and media releases, less suited for publication in a news bulletin such as *Myrmecia*. Distribution by Blackwell Science Asia has worked well this year, although the Journal has been ready for mailing and had to wait for *Myrmecia* to arrive on at least one occasion during the year. Once again, it has been a pleasure working with **Jeff Thornberry** of G.K. Craig Printers in Orange. Jeff has printed each issue without fuss, has followed

my requests/instructions absolutely and has ensured that the printing stage has not contributed any delay in the production of *Myrmecia*. Also providing considerable support during the year has been **John Macdonald** in his role as Assistant News Bulletin Editor. John has always been ready to lend a hand to ensure each issue is ready to go to the printer more or less on time and has been responsible for mailing those copies that are sent to "Myrmecia-only" members of the Society. The system used by Blackwells to send out the Journal with *Myrmecia* enclosed does not take kindly to having subsets with different combinations of inclusions. This is why libraries which subscribe to the journal have suddenly found themselves receiving *Myrmecia* as well and why we have to mail *Myrmecia*-only mailings ourselves.

I have enjoyed my involvement with *Myrmecia* over the past eight years and thank all those members who have contributed news items, notices of meetings, new publications and all those other tidbits that make *Myrmecia* such a welcome arrival on our desks. I also thank those members who have gone out of their way to acknowledge the efforts I have put into the bulletin, including the current Executive who presented me with an AES Service Award in 1998. Finally I wish Laurence every success with the continued production of *Myrmecia* and look forward to being able to sit back and read a new issue without having edited, formatted, proof read and corrected the whole thing already.

Murray FLETCHER
News Bulletin Editor (retired)

Conservation Committee Report

The Conservation Committee comprised 9 members, namely Tim New, Robin Coy and Paul Horne (Victoria), Eric Matthews (South Australia), Alan Andersen (Northern Territory), Robin Gunning and Geoff Williams (New South Wales), Don Sands (Queensland) plus Jonathan Majer (Western Australia). In addition, the President and the Secretary are ex-officio members of the Conservation Committee.

Although few activities have been carried out under the specific banner of the Conservation Committee, members have been active in their own right on insect and related arthropod conservation matters.

Eric Matthews reports that the *Mesostoa* project, involving **Andy Austin** and reported in some detail last year, has now been funded by the South Australian Wildlife Conservation Fund and will also involve the Evolutionary Biology Unit of the South Australian Museum. The Museum has also

mounted an exhibit with the help of the Butterfly Conservation South Australia, Inc., mentioned in last year's report, entitled 'Where have all the butterflies gone?' The exhibit was formally opened on 1 September 1999 and is designed to be portable so that it can tour in venues around the State.

Archie McArthur and three other people from the South Australian Museum and the University of Adelaide obtained a large grant from Primary Industries and Resources, South Australia (PIRSA). This has been provided to determine whether the presence or absence of ant species in the Moomba area can be related to soil disturbance associated with seismic surveys. The project will take two years to complete.

The NSW Threatened Species Scientific Committee has considered several important entomological issues in the last year. The difficult issue of the collection and captive breeding of endangered insects by entomologists in NSW is close to resolution, with the willingness of the NSW National Parks and Wildlife Service to negotiate a group-collecting licence with Australian Entomological Society.

The NSW Threatened Species Scientific Committee has been anxious to address the processes which threaten the survival of insects in NSW. The committee has researched the decline of some hill-topping butterfly species in NSW and will shortly make a preliminary determination to list the loss of butterfly hill-topping sites as a key threatening process in NSW. The scientific committee has also addressed the conservation status of the Odonata in NSW. While most species are defined as "fish" and fall within the sphere of the NSW Fisheries Management Act, the giant dragonfly, (*Petalura gigantea*, (by virtue of its unusual terrestrial habits), has been listed as an endangered species in NSW. The Giant Dragonfly has been driven to virtual extinction in NSW by the destruction of its habitat (peat moss mining etc). The committee is presently consulting AES members for advice on the conservation status of other dragonflies in NSW.

The introduced crazy ant *Anoplolepis gracilipes* has invaded parts of the rainforest of Christmas Island, where it has eliminated the Island's famous crabs and caused major changes to rainforest dynamics.

Alan Andersen is on the Steering Committee overseeing its management, and will soon be on the island with other Steering Committee members, including **Denis O'Dowd** and **Hal Cogger**. Alan's group has a range of collaborative projects with The Parks and Wildlife Commission of the NT, which is now routinely including invertebrates in their wildlife

surveys that form the basis of conservation planning. **Don Sands** informs us that a National Action Plan for the conservation of Australian butterflies has been commissioned by Environment Australia and is due for completion by July 2000. Contributions are being sought from experienced amateur and professional lepidopterists at workshops being held in most States, to identify what is known about the threats to butterflies and their populations. The project co-ordinated by **Tim New** (La Trobe University), **Don Sands** and **Geoff Clarke** (CSIRO Entomology), aims to assess the conservation status of all Australian butterfly taxa by applying the IUCN guidelines and by focussing on those criteria that differ from those applied to vertebrates. The Action Plan for Australian butterflies will also provide outlines of recovery actions for some threatened butterflies and be useful as a basis for the developing conservation protocols for other threatened terrestrial arthropods in Australia.

On behalf of the Society, the convenor made a submission to AQIS concerning the Import Risk Analysis on the importation of mushrooms. The convenor is now listed on the Register of AQIS Stakeholders and is therefore able to be kept informed about relevant issues concerning insects. He also assisted the Environmental Defenders Office (WA) with its preparation of a discussion document concerning the forthcoming WA Biodiversity and Conservation Act. A major thrust of this document is the appropriate consideration of invertebrate and microbial diversity.

At the time of writing, the proceedings of the Sydney invertebrate biodiversity and conservation conference has just been released (*The Other 99%: The Conservation and Biodiversity of Invertebrates* ed. by W. Ponder and D. Lunney). Plans are well under way for the Perth sequel conference, which takes place in December 1999. Details of this conference may be obtained by visiting the home page: <http://www.museum.wa.gov.au/Dampier300/Dampier300.htm>

As I have mentioned before, the activities of the Conservation Committee are partly driven by information received from Society members - they are encouraged to contact the Convenor if they believe that any issues should be addressed. They are also encouraged to nominate to **Robin Gunning**, myself or other Conservation Committee representatives any species which they feel should be considered for listing as rare or endangered by the Commonwealth or appropriate State or Territory. Finally, we have simplified the structure of the Conservation Committee by having no more than

one representative from each State or Territory. As a result, **Robin Coy**, **Paul Horne** and **Geoff Williams** will cease to be members. On behalf of the Society, I thank them for the services that they have provided to this Committee. The new membership, is given on the front cover.

Jonathan MAJER

Convenor, Conservation Committee

CONSERVATION ACTION PLAN

The CSIRO Entomology Invertebrate Conservation Biology group is currently developing an Action Plan for the Conservation of Non-Marine Threatened Invertebrates on behalf of the Threatened Species and Communities Section, Environment Australia. The plan cannot possibly hope to cover all invertebrate species of conservation concern. As such, the project will focus on 25 priority species. The choice of species for inclusion will be based on objective assessment against the IUCN 1996 Red Book criteria. However, we are also aiming for taxonomic representativeness. It should be noted that butterflies will not be included as they are being covered in a separate Action Plan.

The Action Plan is designed to provide up-to-date comprehensive biological, ecological and distribution data for the species being covered. It will identify those threatening processes contributing to the decline of the species and recommend a series of actions designed to alleviate these threats. As such, it will provide conservation and resource managers with much needed information to assist in the long term conservation of these species. Although limited in its scope of 25 species this Action Plan should be seen as setting the groundwork for inclusion of additional species in future. We believe this project to be a very important step for invertebrate conservation in Australia.

A list of species that are believed to be threatened has been collated from recent literature and contains over 800 species. It covers species that have been formally listed under various State and Federal Acts as well as those that have been commented on by authors. This species list and associated bibliography is on our web page.

In order for us to make the right decisions as to which species should be formally assessed and included in the Action plan we require the advice and assistance of our colleagues. If you are interested in assisting us in this most important project please take the time to visit our WEB site at www.ento.csiro.au/conservation/actionplan.html

Any information, queries or comments please by the 30th November 1999 to:

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Invertebrate Conservation Biology
Natural Resources and Biodiversity Program
CSIRO Entomology
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CANBERRA CITY ACT 2601
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fiona.spier-ashcroft@ento.csiro.au

STUDENT FORUM

Welcome back to the student forum! The editors welcome contributions from honours and postgraduate students on almost any issue you would care to write about - areas of concern for postgraduate students (like Tara's contribution below), your project (like Olivia's contribution), or something you feel needs to be said about entomological issues. I would also appreciate feedback about what you think needs to be included in this forum.

Feedback from the postgraduate dinner at the Canberra conference was very positive and many who were there appreciated the opportunity to speak to other postgrads. Being a postgrad in a small lab or a small department can often be isolating, so the opportunity to talk to others in your field who are also going through the rigours of a PhD or MSc is a Good Thing. We would like to make this into a regular tradition at Aust. Ent. Soc. conferences. To that end we are seeking expressions of interest from postgrads who would like to participate in a mini-meeting with just postgrads and maybe one or two post-postgrads. This would give you an opportunity to discuss common issues of science, talk about the positive and negative aspects of your postgrad experience, employment futures, supervisors, & etc. I envisage an informal meeting of a couple of hours followed by recess at a convenient pub. The time could be scheduled before or after the main conference so that most people would already be assembled. Please contact either me (Isilberb@metz.une.edu.au) or Tara Simmul (tara.simmul@ffp.csiro.au). If you would like to be involved with organising such an event then please let us know and if you have ideas about how it should all happen then please communicate those ideas!

Tish SILBERBAUER

POSTGRAD POINTS - SOME THINGS TO THINK ABOUT...

At the recent Annual Entomological Society Conference I talked to a number of fellow students about their postgraduate and honours projects. Topics often mentioned included supervision and facilities. I decided to try and put together some notes on these areas. These are generally my ideas, based on my experiences and those of students I talked to. Feel free to write in with your responses.

Why do a postgraduate degree?

I put this question to a range of students, in a range of science disciplines. The answers were interesting and included; *'I wanted to be a chief instead of an indian'; 'I couldn't think of anything better to do'; 'It was good pay, and saved worrying about a job for at least 3 years'*. A few people said they were genuinely interested in research and wanted a challenge. My feeling is that a postgraduate degree should be taken a little more seriously than many of these responses suggest, yet so many of us enter into one without really thinking. So, if you are contemplating further study, some questions to ask yourself might be:

- What are my interests and how can they be built into a postgraduate degree?
- How much do I know or have I thought about this?
- Why do I really want to do this?
- What do I hope to obtain?
- What do I want to study?
- Am I prepared to work on this for the minimum time or longer?

Now that you've decided, what next?

Postgraduate projects can be developed in different ways. Often they are advertised and include a scholarship for salary and operating funds. Other times they are not. If that is the case, you may need to write down what you want to do and approach institutions/potential supervisors and see what they can offer. Below are several points covering areas I consider important to the smooth running of postgrad study.

Funding

Funding can be varied, according to the supervisor, university, industry input and a variety of other things. Points to consider here might be;

- Can I live on this?
- Is the yearly operating budget enough?
- What happens if I go over budget or run out of money?
- Is the operating money exclusively for my usage? Who controls the budget?
- Am I able to attend conferences? Who pays?

- If there is a tight budget, will it affect my research? How much?

Some students have to use their scholarship money to partially fund their research. Needless to say, this is often not sustainable. Others had to use their own vehicles and fund their own fieldwork. In this instance, are you/your car covered by insurance? One student I talked to broke a windscreen on a field trip in their personal car and had to pay for it themselves. My own experience with funding has been excellent. My project receives a reasonable sum annually, which is put into an account specifically for my use. I am able to make purchases and organise my own expenditure for most items. I am also able to attend a conference each year. This also provided me with experience in managing resources for the project.

Supervision

This is covered in many postgraduate handbooks, and it is useful to clarify the responsibilities of both the student and the supervisors. For example:

- How many supervisors? What is their experience with students? Can you talk to other students with the same supervisor?
- Can you choose your supervisor?
- What is the supervisor's main area of expertise?
- Does the supervisor have enough time for students? This is particularly important in the early stages of a postgraduate degree, when the project is getting off the ground, and also in the final stages of the postgraduate degree when feedback is required.
- Do you relate well to your supervisor on a professional as well as a social level?
- Are you happy to accept criticism from this person?

Supervision Problems

Many students experience problems with their supervisor/s at some stage in their postgraduate degree. This may be through the fault of one or both parties, but may also be caused by something beyond the control of both (ie. retirement, supervisor or student moving interstate for personal or other reasons). Other times, problems may arise due to a lack of open communication, as people sometimes find it difficult to be fully open or explain themselves clearly when upset or intimidated. I have been involved with the Tas. Uni. Grievance panel as a student member and thus have had some experience with student problems in the university system. Steps to resolve problems could include;

- Can you clarify your problem by writing it down in point form?
- Keep a diary or make notes regularly about how you are feeling and how you feel your work is progressing. Think about whether the problem is affecting your work and how much? This might be an important record.
- If the problem is affecting your work, talk to your supervisor. If you can't, try the Head of Department, or a uni counselling service. It is important to address problems sooner rather than later.

If you have no success resolving the problem at the department level or feel uncomfortable doing this, most universities have a person whose position is to deal specifically with student problems. This person can usually be found via the student union postgraduate representative, or you may want to directly contact the Dean of Postgraduate Studies. My experience with these people is that they are sensitive and caring, and are keen to help you complete your studies in a supportive environment. Remember, it is in the best interests of the University to support the student, because if you are not happy you are not likely to be productive. So - say something to someone who can do something about your problem. Similarly, if the supervisor feels that there is a problem, they should approach the student, and if that fails, they should seek a 'round table' discussion with the Head of Department and student to openly air all problems.

Facilities

Before commencing further study, it might be prudent to consider the type of project and what facilities and equipment are required to do the work. The most basic requirements are desk space, telephone access and a computer with email. Library access is crucial. Laboratory space is also important, and field sites may also be necessary. Useful extras would include access to a fax machine, scanner, internet facilities and photocopier. In some cases you may have to pay for these, or use facilities in other departments, so can you incorporate these costs into the budget?

In the laboratory, who pays for chemicals, petri plates, pins, collecting equipment, insect rearing facilities etc.? Are there enough incubators and microscopes? Are they shared? Do you require special facilities eg. quarantine? If you need to conduct fieldwork, is there a vehicle? Are you and your assistants covered by insurance? If the work is in a remote area you may need to take another person with you. Is there a mobile phone or radio to call for help in the case of an emergency? Talk to

other students in the area to see how they have managed.

Library facilities

You need to be able to readily access journals and publications. This has become much easier in recent years, with the internet and online services, but you must make allowance both for delays and costs, particularly inter-library loans from overseas.

Finally:

I believe that to attract more students to entomology we need to have more exposure and to be seen as a 'happening' group. To do this we need happy students who are able to conduct good research and encourage others with their good experiences. The experience of a postgraduate student is affected by many things, as noted above. We need to promote our research as interesting as well as relevant to today's society. We need to be there to encourage students who are interested to investigate further study and to provide a supportive environment for that study. Supervisors need to encourage their undergraduate students in entomology and conduct interesting lectures and practical sessions that show what a diverse range of skills and people are involved with entomology. It is also important that once postgraduate students commence their studies they continue to obtain support and encouragement from their peers. As a Society, we need to consider our individual roles as well as those of the greater group in fostering entomology in Australia.

Tara SIMMUL

Email: tara.simmul@ffp.csiro.au
11A Pike Street, Karrinyup, WA 6018.

P-G PROJECT OVERVIEW

Research Topic: The influence of host plants on the mating behaviour of the cotton bollworm, *Helicoverpa armigera* (Hübner).

The cotton bollworm, *Helicoverpa armigera* is one of Australia's most damaging agricultural pests. In cotton alone it causes in excess of \$130 million annually in control costs and residual damage. Transgenic cotton (*Bt* or INGARD® cotton), genetically engineered to express the insecticidal protein genes from *Bacillus thuringiensis*, reduces pesticide requirement by 50-80% and significantly reduces pesticide costs as well as environmental damage. To avoid *Bt* resistance in *H. armigera* a resistance management strategy has been developed. The strategy is based on the use of refuges to maintain susceptible individuals in the population. A refuge is an area of habitat where *H. armigera* can mate without exposure to *Bt* toxins.

The mating success of moths within refuges and surrounding vegetation may have a significant impact on the dilution of resistant alleles by susceptible moths from that refuge.

The literature suggests that females may produce more pheromone or spend more time calling in the presence of host plants or their volatiles. For example, in the closely related American species, *Helicoverpa zea* (Boddie), it was shown that in moths collected as larvae from corn, pheromone production in the laboratory was 20-30 fold greater in those exposed to corn silks or their volatiles (ethylene and long chained alcohols) than in those not exposed. Male responsiveness to pheromones may also be influenced by the surrounding host plants. Information about the influence of host crops on the reproductive behaviour of *H. armigera* may suggest a role for various crops in refugia, beyond producing susceptible individuals. It may reveal that some crops could be suitable for planting within refugia as 'mating areas' for *H. armigera*.

Progress

Techniques have been developed in the laboratory to recover the very small amounts of pheromone produced by individual females, and to quantify them using GC-MS methods. Preliminary studies suggest that females spend more time calling in the presence of host plant volatiles than in their absence.

Laboratory studies of male behaviour in the presence of host plant volatiles in a wind tunnel are near completion. Although the data have not yet been fully analysed, there appear to be few effects of host plants on male response to pheromones in the wind tunnel.

Field studies have now been substantially completed, with two seasons of experiments on the Darling Downs, Queensland. Techniques have been developed to measure the mating success of captive female *H. armigera* in crops. Comparisons of cotton, sunflower, sorghum, soybeans, maize as well as fallow land have been made. Preliminary results suggest that there are no consistent patterns of mating success in relation to crop type, though trap catches can vary widely.

Highlights

In 1998 I was fortunate enough to win a travel scholarship to the 'World Cotton Research Conference-2' at Athens, Greece, where I presented a paper on 'The influence of host plants on the mating success of the cotton bollworm, *Helicoverpa armigera* (Hübner) (Lepidoptera: Noctuidae)'. This

provided me with an insight into the cotton industry worldwide and entomology in general. It was an incredible opportunity and I would encourage everyone, especially students to grab any opportunity that you have to gain greater knowledge and experience in your area of research, whether it be through a national or international conference or other means.

So far I have published two conference papers, presented at three conferences (and attended more) and have a journal article being considered for publication. My supervisors are Dr. Peter Gregg (Associate Professor, UNE), Dr. Chris Moore (Principle Chemist, QDPI) and Dr. Alice Del Socorro (Research Officer, UNE), and this work is funded by the Australian Cotton CRC.

Olivia KVEDARAS

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RECENT PUBLICATIONS

The whitefly fauna of Australia (Sternorrhyncha: Aleyrodidae): A taxonomic account and identification guide.

Jon Martin

CSIRO Entomology Technical Paper No. 38.

August 1999

Canberra, Australia

ISBN: 0 643 06418 4

It is with great joy that I have the opportunity to review this book because, up until this publication the all-to-frequent task of identifying whiteflies, especially native species, has been done with great trepidation. The paucity of recent literature available to identify whiteflies in Australia has been conspicuous. With increased interest in this group as witnessed by the recent incursions of several important pest species into Australia, the timely release of this book has filled this void.

This book includes a history of the study of whiteflies in Australia, an overview and checklist of the Australian whitefly fauna, keys to genera and species, descriptions of species augmented with many good illustrations, information on collecting and mounting, a list of host plants, a family-genus index for host plants, a bibliography and index. The layout of the book, in line with others in the series, provides an easy-to-use and readable style. I found the keys user friendly with most characters well defined and usually well illustrated. Similarly, the descriptions are concise, informative and are often appended with useful notes on the biological, economic or taxonomic significance of each taxa. I have found the host list of particularly useful for confirming the identity of several species. In this 200 page volume Jon Martin has reviewed the major holdings of Australian whiteflies and, with the addition of some recent Australian collections, he has revised the Australian whitefly fauna. This publication has increased the number of whitefly species known from Australia by >200% (48 to 101 species), and genera from 33 to 40. The description of 53 new species, six jointly with Mary Carver, belies the fact that a further 65 species are known to still remain undescribed from Australia.

The history of the study of whiteflies in Australia is remarkably sparse. This book brings to light the fact that many of the original descriptions of the Australian species were published by New Zealanders (Maskell and Dumbleton). These pioneers in the study of whiteflies worked on collections sent to them from collectors in Australia

without actually working in Australia themselves. It could be conjectured that their interest in this group is not surprising, considering the similarity that these white woolly insects have to the dominant faunal element of their homeland.

The recent introductions of important pest whiteflies into Australia like *Aleurodicus dispersus* Russell, *Siphoninus phillyrae* (Haliday), *Aleyrodes proletella* (Linn.) and 'biotype B' of *Bemisia tabaci* (Gennadius) has aroused interest in the Aleyrodidae. Research on pest management, quarantine implications and the bioclimatic potential of those and related pest species affecting agriculture in



Australia has received some recent focus. This book will serve as an essential tool for workers in these areas. Jon Martin has also included three species of economically important whiteflies that are not presently found in Australia. They are considered to be "threatening" to agriculture but up till now no detailed account of their identification has been available. The inclusion of these species (*Aleurocanthus woglumi* Ashby, *Aleurothrix floccosus* (Maskell) and *Parabemisia myricae* (Kuwana)) makes this book invaluable to workers dealing with quarantine issues facing Australia.

This book represents a tremendous advance in our knowledge of the identity of Australian whiteflies. Its only failing, apart from a typographic error on page 83, is the fact that the author could not describe the remaining 65 species because of time constraints. This volume will be essential reading for students of the Australian Sternorrhyncha, and it will become a highly regarded text for all those concerned with the identification of plant feeding insects affecting agriculture and trade in this country. Copies are available at no charge from the editor of Myrmecia: laurence@ento.csiro.au.

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LucID guide to Aquatic Macro-Invertebrates - edition 2

Ben Gunn, John H. W. Trueman, Sophia Dimitriadis and Peter Cranston, aided by the Australian aquatic invertebrate research community

Anyone who has any interest in invertebrates, whether aquatic or not, should contact Peter Cranston (petercr@ento.csiro.au) to acquire a copy of this cd-rom. The identification system is illustrated by more than 1500 photographs, many of organisms that each of us rarely sees. Thinking back to my youth, when the only readily available pictures of such organisms were in Buchsbaum's 'Animals

Without Backbones', I am conscious of how the world has changed. The colour photomicrographs given here will widen the horizons of any student interested in zoology.



Ben Gunn was largely responsible for drawing the vast amount of information together, and producing so many photographs, during a 6-month contract funded by the Land and Water Resources Research and Development Corporation. The initial key leads to the following groups, each of which is then dealt with more fully in its own individual sub-key:

Platyhelminthes - 9 terminal taxa
Mollusca - 27 terminal taxa
Crustacea - 57 terminal taxa
Arthropoda - 31 terminal taxa and 10 subkeys:
 Arachnida - 22 taxa and 1 subkey :
 Hydracarina - 42 terminal taxa
 Collembola - 4 terminal taxa
 Ephemeroptera - 9 terminal taxa and 1 subkey
 Caenidae - 27 species
 Odonata - 17 terminal taxa
 Plecoptera - 4 terminal taxa
 Hemiptera - 18 terminal taxa
 Neuroptera and Megaloptera - 6 terminal taxa
 Coleoptera larvae - 22 terminal taxa
 Coleoptera adults - 20 terminal taxa
 Diptera - 29 terminal taxa
 Trichoptera - 25 terminal taxa and 2 subkeys
 Hydropsychidae - 12 species
 Philorheithridae - 15 species

In addition, the initial identification key leads to the following groups for which there are no sub-keys:

Porifera (sponges)
Cnidaria (jellyfish - medusoid forms)
Cnidaria (jellyfish - hydroid forms)
Bryozoa (moss-animals, pipemoss)
Rotifera (wheel animals)
Gastrotricha
Nemertea (Rhynchocoela- ribbon worms)
Nematoda (roundworms, eelworms)
Nematomorpha (Gordian worms, horsehair worms)
Polychaeta (beach worms)
Oligochaeta (earthworms, etc)
Hirudinea (leeches)
Tardigrada

Distribution of the CD is free thanks to the funding of CSIRO Land and Water Sector

Laurence Mound

FORTHCOMING PUBLICATION

"Insects: An Outline of Entomology", by Penny Gullan and Peter Cranston, to be published by Blackwell Science this December. This new edition replaces the book, published originally by Chapman and Hall, that has proved so very popular for entomological courses in North American Universities. Penny and Peter have retained the chapter sequence and internal structure of the book

to assist those that follow its structure in their lecturing. However, a new final (16th) chapter covering methods in entomology, including preparing and conserving a collection, has been added, and Chapter 1, has been radically reorganised to emphasise insect biodiversity, its measurement, its importance and how it is distributed. By



popular request, the summary table of diagnostic features has been moved from Chapter 1 to the end pages, for easier reference. Insect physiology is expanded with new sections on tolerance of environmental extremes, thermoregulation, control of development and some new ideas on vision. Discussion of insect behaviour has been enhanced with more information on insect-plant interactions, migration, diapause, hearing and predator avoidance, "puddling" and sodium gifts, and in the ecological area functional feeding groups in aquatic insects are considered. Throughout the text new interpretations and ideas are incorporated, some errors corrected and extra terms added to the glossary.

Karina McInnes' illustrations that proved so popular with reviewers of the first edition have been retained and supplemented, especially with some novel chapter vignettes and additional figures for the taxonomic and collection sections.

In addition, forty-one colour photographs of colourful and cryptic insects going about their lives have been chosen to enhance the text.

The well-received boxes that cover self-contained themes tangential to the flow of the text have been retained and supplemented with new ones covering two resurging pests (the pest aphid *Phylloxera* and *Bemisia* whitefly), the origins of aquatic lifestyle, parasitoids detecting host by hearing, the molecular basis of development, chemically-protected eggs, and the genitalia-inflating phalloblast. Finally, and by no means least in the opinion of those of us interested in virus transmission, this is one of the few textbooks of entomology that correctly describes the feeding mechanism of thrips! It is warmly recommended.

Laurence Mound

REGIONAL NEWS

AUSTRALIAN CAPITAL TERRITORY

Canberra entomologists appear exhausted by hosting the AGM. Our two new Councillors having yet to 'settle-in', offered the following solitary item: **Penny Greenslade** left AQIS Plant Quarantine Branch at the end of October, and is back chasing Collembola from Cape Range to Lamington NP.

Peter Cranston provides this partisan report supplemented by a cull from various newsletters, starting with the news that the systematists and all colleagues are pleased to see **Ebbe Nielsen** back in the office following his operation, at this stage for two days a week. Ebbe returns not only to head ANIC, but to look after the day-to-day running of the Lepidoptera program. Ebbe takes his first flight in many months to visit Paris and Washington in connection with GBIF activities.

Other internal management changes have **Dave Rentz** looking after all the activities in his collection hall, which means not only the Orthopteroids, but also the Hemipteroids, all aquatic orders, Diptera and Siphonaptera. More than half the orders now fall under Dave's care. Meanwhile Dave and **You Ning** have headed for Western Australia for a spring hunt to link with University of Western Australia orthopterists including **Wyn Bailey**.

Since the last *Myrmecia* report from Canberra, lepidopterist and councillor **Marcus Matthews** and fellow lepidopterist and Fulbright scholar **Michael Braby** have moved on - although both their books (Heliothines, butterflies respectively) advance towards eventual publication. **Lauri Kaila** from the Finnish Museum of Natural History, a microlepidopterist (the moths are small, not Lauri) has moved into some of the vacated space, where he shared a room with **Gary Gibson**, Canadian microhymenopterist (small wasps ...) until Gary returned to face another Ottawa winter.

The Diptera and Aquatic Insect unit is reduced to a rump. **Ben Gunn** (compiler of the Aquatic Macroinvertebrate CD-ROM mentioned elsewhere in this issue) has headed for China - for linguistics not science. **Sophia Dimitriadis** has commenced her PhD at ANU, and immediately suspended to take up a one year Swiss Government scholarship to work on past climate reconstruction using chironomid head capsules. She passed her "immersion" course in German (in beautiful Freiburg) and now starts in the Bern laboratory where everyone speaks English, and the world's best palaeo crew assemble. **Günther Theischinger** has

ceased his part-time support work for the aquatic orders in ANIC, and returned full time to the NSW EPA. **Peter Cranston** meanwhile has his son **Andrew** designing web sites (AES meeting, etc) converting the Guide to Australian Chironomidae to web and pdf accessibility, as a parting gesture to the Australian limnologists that provided the impetus and support to undertake the rearing of so many of the little midges. The period also saw the end of the CRC Rainforest project on dung beetles and rainforest history, with **Chris Reid** moving on to the Australian Museum, where he applies some similar techniques - phylogenies, mapping and modelling, but this time for northern NSW rainforest taxa. Over at ANU - funding crises, course cutting, staff departing, students revolting, as in all Australian Universities. Absailing past all these activities **Kendi Davies** has completed her thesis on some effects of fragmentation, using the famous Wog Wog experimental site. She now has a post-doc at CSIRO Wildlife and Ecology, Gungahlin, as does **Brett Melbourne**, who hasn't quite finished writing up yet. Brett is working on scales, but not the blobby ones that interest **Penny Gullan** and **Lyn Cook**. The latter pair have not been letting the grass grow, although they have apparently found their morphological and molecular phylogenies of scales to be lawn-like. Lyn has taught some students, and an equally incompetent academic (the author of this report) to extract and purify DNA and pour the resultant supernatant and DNA down the sink. Our admiration of her (nearly) always total success in these matters has increased greatly. **Paul Cooper**, entomological poet laureate, seems to be taking over the mantle of automatic supervisor for CSIRO research assistants thinking of doing PhDs, and thereby increasing the traffic across Clunies Ross Street. **Hari Sutrisno** also deftly treads the path between CSIRO and ANU, avoiding magpies, showing equally strong grasp of phylogenetic concepts, including testing robustness of his moth clades as he nears completion of his Masters thesis. On this latter business (phylogenetics) **Stefan Schmidt** (post doc in Hymenoptera), **Rolf Oberprieler**, weevil supremo, and **Hannah Reichel**, ant lady, attended part or all of the Hennig meeting in Germany in September - reports to the Coopers and Cladistics discussion group (still going) varied, mostly concerning manners and software rivalry. I don't know what happened elsewhere, nor who's applied for any positions that may or may not be offered here, and if I did I wouldn't be telling because I signed a piece of paper ...

Peter CRANSTON

NEW SOUTH WALES

Orange Agricultural Institute

Danuta Knihinicki has received official notification that her M.Sc. degree from Macquarie University has been approved and she will graduate early next year. Congratulations Danuta on a fine achievement. **Murray Fletcher** attended the 10th International Auchenorrhyncha Congress in Cardiff, Wales, in September. He presented a paper on the Australian Deltocephalinae and a poster advertising his Key to the Australian Planthoppers. This key is available on the Department's external website. At the meeting, **Mike Claridge**, who started these congresses 26 years ago, stood down as Chairman of the Standing Committee for International Auchenorrhyncha Congresses since he has now retired from the University of Wales, and Murray was appointed to take over this role. Murray has also been made responsible for resurrecting *Tymbal*, the Auchenorrhyncha Newsletter and to create a website for *Tymbal*. While in the UK, Murray also visited The Natural History Museum in London to spend two days sorting out a few problems with new Australian genera with **Mick Webb**. While there he looked at the Banks collection and noted the specimen of *Myrmecia gulosa*, on which the AES emblem is based.

Recent visitors to the Collections Unit include **Ron Stinner** of North Carolina State University who manages IPMNet USA and **Louise Lawrence** of CSIRO Canberra. Ron presented a (poorly attended) seminar in NSW Agriculture's Head Office on the establishment and maintenance of IPMNet USA with advice on IPMNet Australasia currently being established through cooperation with Federal and State government agencies and coordinated by Louise. **Laurence Mound** visited Murray on Wednesday 13th October to take over the reins as Editor of *Myrmecia*, a job that Laurence is sure to find both frustrating and rewarding, especially as his predecessor was late with his first contribution as Regional Councillor.

Mike Gray and **Graham Milledge** of the Spider Department at the Australian Museum visited Orange 14-16 October. During their visit Mike presented a talk to the Orange Field Naturalist and Conservation Society, sorted through the spider collections held by the Collections Unit and led a spider hunt for the Field Naturalists to Ophir Reserve. The finds were brought back to the Unit on Saturday afternoon for examination under the Unit's microscopes.

Graham Thwaite received news that a study of the pest and disease complex of prunes has been funded by the Australian Prune Industry. This four year study aims to develop an integrated pest and disease management approach which it is hoped will be adopted by most growers. A team of people has been assembled to undertake the trials in the two prune growing districts of New South Wales, Griffith and Young. In the first season, which will establish some base line data, the ASCU at the Orange Agricultural Institute will have a major role as the pest and predator complex is largely unknown and the individual species of insects and mites need to be identified.

Graham Thwaite attended the International Conference, "Spray Oils Beyond 2000" held in Sydney in late October. Some of the overseas delegates visited the Institute for pre- and post-conference discussions with entomologists at Orange. Visitors included **Matthew Addison** from South Africa, **Art Agnello** from New York State and **Rick Hilton** and **Phil Vanbuskirk** from Southern Oregon USA.

Murray FLETCHER
Regional Councillor

NORTHERN TERRITORY

Northern Australia Quarantine Strategy

The influx of East Timorese refugees and the movement of people and gear between Darwin and Dili has prompted all sorts of quarantine action in Darwin. **Glenn Bellis** has been inundated with queries about the pest situation in Timor, the risks posed by the current volume of traffic and how best to monitor for incursions of nasties in Darwin. Glenn accompanied visitors **Matthew Purcell** and **John Goolsby** on a morning of looking for natural enemies of *Melaleuca* and *Lygodium*.

Territory Health Services

Medical Entomology Branch

The early wet season storms have started in the north, adding complexity to the branch's mosquito surveillance program in the storm water drain system. This year there are unusually high tides at the end of the month for the last three months of the year the branch is gearing up for a heavier than usual salt marsh mosquito control program.

Peter Whelan and **Andrea Wilson** have been involved with the Timor refugees in Darwin, advising on locations for a camp and ensuring the camp was free of malaria mosquitoes and flies. Peter has also been involved in advice to the various aid agencies and the United Nations in Timor on mosquito control and assessing the potential for mosquito borne

disease based on his previous mosquito surveys in Timor and specifically in Dili. The recent trap results from Dili indicate only pest mosquito problems in certain localities.

Andrea and Peter have also been steadily tackling the annual storm water drain maintenance and upgrading program. Some of the breeding site rectification measures are already underway with one large scale filling operation at an inner suburban location. The large project with the Defence Department is finally achieving progress with the start of a detailed unexploded bomb survey completed, and the main fill operation contract let to start in the first months of the dry season next year.

Jane Carter is finalising graphs and tables for the detailed branch annual report and this will soon be available for all interested parties and clients. Jane is eagerly awaiting the return of **Gwenda Hayes** in November. **Bernadette Haigh** and Andrea have just completed a mosquito survey of the RAAF base at Tindal where mosquito problems have been driving the air crew loony. **Dan Richards** and **Brian Baker** and Bernadette have been juggling mosquito surveys, routine mosquito identifications with entering a back log of data into the MEB data base. Sadly Dan will be leaving the branch at the end of October to take up a position as an environmental officer with a private company, and we are sure he will continue to keep the pressure up on mosquito issues after all his experience with the branch. We all wish him the best with his new direction.

Another staff member **Sam Englund** will also be leaving in November to travel the world, which will be a welcome change from his excellent work on our reference collection. We will wait for him to come back in a few years. **Martin Shivas** is now up to his eyepieces in biting midges with the biting midge buffer project in Palmerston. He is now reaching the critical period of assessing various parameters as effective buffers between *Culicoides* breeding sites and urban areas.

DPIF - Entomology Branch

The Branch is still enduring the annual "build-up" to the forthcoming WET season which always corresponds to the flurry of activity which precedes and continues into the mango harvest, an especially busy time for us. In addition, the East Timor situation has created extreme nervousness with the quarantine issues involved with movement of large volumes of personnel and materiel. The first of many proposed surveys for exotic weeds, and plant pests and diseases will commence in late October and will cover a huge area of military and other "high

risk" sites. Meanwhile, the regular work continues... A collective sigh of relief could be heard from **Haidee Brown**, **Glenn Bellis** (NAQS) and **Stuart Smith** when the Asian Bee Eradication Program finally ran its course and was wound-up in July. No detections of this exotic bee were found after the initial discovery in mid-June 1999, only two weeks after the Exotic Fruit Fly Eradication Program had completed the "eradication" phase.

Graham Young, **Michael Neal** and **Magen Geyer** have concentrated their research on improved methods and new toxicants for *Mastotermes* control while **Graham Brown** continues extension and research in the Katherine region on irrigated field crops and horticulture. He is at last managing to rear a range of false wireworm species which are suspected to cause problems in a variety of crops including cucurbits and peanuts.

Heather Wallace and **Lanni Zhang** have continued to work on IPM in tropical fruit trees and mite problems in particular and **Elliott Crowson** is making good headway in convincing tropical vegetable growers of the benefits in monitoring for pests and utilisation of more sustainable horticultural and management techniques on their blocks.

On a less optimistic front, **Graham Young** recently tracked down a reference to crazy ants *Anoplolepis gracipes* collected for the first time on the Australian mainland in Eastern Arnhemland in 1990. He and **Glenn Bellis** of NAQS checked out the locality and confirmed their presence. Following a delineation survey next month a decision will be made on whether it is feasible to attempt an eradication of this notorious species, currently causing major concern on Christmas Island.

The NT has finally bitten the bullet and accepted an AES executive "plea" to host the Annual Conference in 2000. **Graham Brown** was suckered into the Chairpersonship of the Steering Committee and already is wearing that well known worried brow more than usual.

CSIRO Wildlife and Ecology

Alan Andersen, **Tracey Churchill**, **Tracy Dawes-Gromadzki**, **Ben Hoffmann**, and **Kate Trumper** spent the last week of September attending the Ecological Society of Australia Conference in Fremantle. The conference theme was "Ecological Connections" with symposia discussing the relevance of ecology to society and the practical application of ecology. Alan has since just returned from Mexico City where he coordinated a discussion on ecological and socio-economic issues at the United Nations Global Facility's Scientific and

Technical Advisory Panel workshop on biodiversity conservation in production forests!

Tracy Dawes-Gromadzki is busy with fieldwork, as termite activity is now on the increase after the first rains of the wet season. **Marianne Baird** has been helping Tracy set up a termite baiting experiment, examining the success of different baiting techniques in sampling termite species richness, and the influence of variation in vegetational composition on the effectiveness of different baits.

Jerome Orgeas has been identifying beetles from a tree-clearing project in central Queensland that our invertebrate labs have been working on in conjunction with the Queensland Department of Environment Protections.

Tony Hertog has been working on the ants and beetles in pitfall trap samples collected from a Conservation Commission Project at Brunette Downs. **Lyn Lowe** is out in the field with wildlife photographers and a Japanese Television Production Team looking at the Lychard grasshopper near Oenpelli. **Ben Hoffmann** is in the final stages of his PhD, currently writing manuscripts on the responses of ant communities to grazing in the Victoria River District, fire in the VRD, grazing in northern South Australia and sulphur dioxide emissions at Mt. Isa. **Kate Trumper** from the University of Sheffield in England has recently returned home, after completing her final 6 months of work in Darwin. Kate successfully eradicated the introduced Big-headed ant from a 4 ha area at Howard Springs and measured the return of native invertebrates.

Martin SHIVAS
NT Councillor

NORTH QUEENSLAND

NAQS Mareeba

Judy Grimshaw and **Barbara Waterhouse** visited Badu Island during the Torres Strait Plant Survey in August, detecting red-banded mango caterpillar. They are now somewhat geographically embarrassed, heading off to survey Norfolk Island, one of the few Australian islands NOT located in the Torres Strait! **Kerrie Huxham** visited Torres Strait and Northern Peninsula Area (NPA) of Cape York in September to conduct the second annual regular audit of fruitfly traps and operator technique for 1999. Generally traps were in excellent order. Kerrie will be commencing a fruitfly trap efficiency trial in late October comparing fly catching ability of modified steiner, paton and lynfield traps. The choice of trap type for NPA and Torres Strait

conditions will then be made balancing trap efficiency against management considerations.

Tropical Public Health Unit, Cairns

Dr. Paul Reiter and **Dr. Duane Gubler** were guest speakers at a Dengue Symposium held in Cairns in late October, both of the CDC in the good ol' US of A, along with **Dr. Goh** of Singapore. **Brian Montgomery** has recently (April) been employed, formerly of the NT Health Dept. in Darwin under Peter Whelan. Brian replaced **Andrew van den Hurk**, who is working on a PhD (and visa versa!) at UQ on the vector competence of Aussie mosquitoes to Japanese encephalitis virus. **Scott Ritchie** proudly reports that the Dengue Action Response Team (DART), a 3 member "SWAT" team trained to fight dengue, started in Dec. 1998. Within 3 months, the DART, together with Douglas Shire Council personnel, eliminated the dread dengue virus that had been plaguing N. Queensland since Nov. 1997 after 498 cases.

QDPI Entomology - Mareeba

Ruth Huwer from CSIRO in Canberra touched down briefly in nQld to visit several entomological colleagues. From here she was heading to Darwin for a few days before returning to Canberra. **Agnes Rortais** interrupted her studies briefly in October to return to her home in France. Agnes, based at JCU in Townsville is in the writing-up stage for a PhD thesis on the biology and ecology of two species of scarabaeine dung beetles found near Paluma. The work has got **Ross Storey** in an excited frenzy!

Patrick Huber is also in frenzied mode. He recently presented his PhD exit seminar on fruit piercing moths in Cairns and via teleconference to JCU Townsville, and is currently writing up. This is a bit of an exciting time for Patrick, he is also gearing up to be married in December.

Harry Fay, **Bruno Pinese** and **Keith Halfpapp** will be participating in the Queensland Horticulture Institute's inaugural workshop for its entomologists to be held in Gympie in mid-October. The workshop will mainly deal with issues of importance to professional development within QHI, such as an aging professional staff and the need for continuity of experience, better use of under-utilised skills, opportunities for technicians and scientific publication. A trivia night is planned to challenge teams on a range of entomological topics, but a multiple choice format has been adopted to give the gamblers a chance.

Harry Fay will be attending the Asia-Pacific Conference on Chemical Ecology in Shanghai in early November, and will present a talk on bait development for fruitpiercing moths. A number of other entomologists and chemists from southern centres are also making the trip, so Australia will be well represented. Unfortunately, the conference organisers didn't factor in that big race day.

JCU - Cairns

Jamie Seymour brought his tropical entomology students to visit the Mareeba DPI and AQIS labs in October. **Ross Storey** gave them an excellent insight into entomological practices, and tips on how to correctly curate their insect collections.

Kylie ANDERSON

QDPI

The West Indian drywood termite (*Cryptotermes brevis*) was discovered infesting the Industrial Pavilion and Horse Stables, Royal National Association Exhibition Grounds, in October 1997. **Brenton Peters** (Queensland Forestry Research Institute) supervised the fumigation of these buildings in September 1999. Treatment cost \$670K. With a plan area exceeding 1 ha, the Industrial Pavilion is one of the largest buildings ever fumigated in Australia. Equipment required to cope with the 85,000 m³ of space in this building included: 15,000 clips; 700 'G' clamps; 2,100 wooden battens; 5 tonnes of sand snakes; 2 kilometres of water flumes; 1 kilometre of gas tubing; 6 vapourisers; 2,000 m² of lagging; 187 air-conditioner socks (each 1.8 m³) and 4.6 tonnes of methyl bromide. A helicopter was employed to place the sheets strategically on the roof. Brenton advises that the work was completed without incident and with a minimum of disruption to the public. The contractor, Arrest-A-Pest P/L, was commended on its efficient use of fans and air-conditioning units to safely release the fumigant to the atmosphere.

A plague of field crop entomologists recently invaded the Queensland Horticultural Institute gathering of entomologists at Gympie. **Dave Murray**, **Bernie Franzmann**, **Gordon Simpson**, **Richard Lloyd** and **Adam Hardy** (all from QDPI Toowoomba) attended two days of the meeting. Unfortunately they missed the entomology trivia night, and wondered if the horticulture team had planned the timing of the night to avoid a bit of healthy competition! Nevertheless, the field crop bug people enjoyed catching up with their horticulture counterparts. It's a shame that DPI entomologists don't get together more often.

Since the last edition of *Myrmecia*, **Ian Titmarsh** has been negotiating with the Immigration Department over the entry requirements for **Caroline Hauxwell**, the newly appointed biopesticides entomologist to be based at Indooroopilly. Ian was successful in the first step of the process, so Carrie is now awaiting final approval of her visa and hopes to arrive in Queensland by the end of November. The refurbishing of the biopesticides research facility is proceeding, with the new *Helicoverpa* rearing facility completed and the laboratories themselves are expected to be completed early in November.

Brad SCHOLZ

SOUTH QUEENSLAND

Griffith University

Heather Proctor and **Darryl Jones** are knee-deep in brush-turkey feathers after a very successful feather-plucking season. They are comparing the assemblages of arthropod symbiotes (feather mites and lice) associated with geographically distant populations of brush turkeys. So far they have feather samples from as far north as the Iron Range, as far inland as Carnarvon Gorge, and south to Lamington National Park. Now comes the less exciting task of sorting and mounting all those mites and lice! **Natasha Witting** (Honors, supervisors Heather Proctor and Stuart Bunn) is in the final throes of analysing her macroinvertebrate samples from the Mary River catchment. Although her disturbance treatment didn't seem to cause much difference in assemblage structure, she and her supervisors were most pleased to find that canopy cover has a similar (but opposite) relationship with invertebrate diversity as it does with gross primary productivity.

A number of special topic students are also writing their final reports. **Neal Finch** (supervisors Darryl Jones and Heather Proctor) spent the spring picking ticks off skin samples from red deer (*Cervus elaphus*) from the Esk region. Farmers in that region are concerned that the wild deer are serving as a reservoir for cattle tick (*Boophilus microplus*). Although Neal found that the deer do indeed host these ticks, the numbers on the deer are an order of magnitude less than what can be found on cattle. **Laing Rahner** (supervisors Heather Proctor and Grant Wardell-Johnson) compared the assemblage structure of arthropods on four species of shrubs in Toohey Forest and found that both shrub

species and flowering status had strong effects on the numbers and identities of arthropods.

The Fruit Fly lab continues to plough ahead. **Dick Drew** and **Meredith Romig** appear to have spent most of the year in Vietnam, working on an FAO funded fruit fly project. Dick being full time in Vietnam is only illusory, however, he has also travelled to Bhutan and PNG on fruit fly work. In return, the lab has hosted visitors from China, Vietnam and Bhutan, which have been great experiences. **Frank Page** (QDPI Applethorpe) and **Dan Papacek** (Bugs for Bugs) have kindly offered their time and expertise in hosting field trips for these visitors.

Narelle Power is getting established with her PhD project. Deciding not to work on the fruit infesting Dacinae, she opted instead for the almost entirely unworked (at least in Australia) Tephretinae. The tephretines are daisy-head feeders and her pursuit of flowers has seen her decimate the country-side from south-east Queensland through to Canberra. Interestingly, little flies abound in almost every flower at which she looks. Interactions between insects, secondary chemicals and plant fitness appears to be the way the project will head.

University of Queensland, Department of Zoology and ENTOMOLOGY.

Patrice Bouchard, **David Yeates**, **Shaun Winterton**, returned in one piece from a collecting trip to New Guinea in July. **Andrew Aitkins** joined them from Newcastle University and **Gary Dodson** from Ball State University, Indiana. Collecting was slower than expected with numbers of Terebridae and *Phytalmia* low, but Pat was happy with the Tenebrionids found.

Greg and **Alice Daniels** visited North Queensland in July where **Jeff Skevington** joined them for a couple of weeks. Iron Range and Mt White Coen were targeted for Asilids, Syrphids and Pipunculids. Collecting was exceedingly slow, with the weather much drier and colder than previously encountered at that time of year.

David Yeates and **Shaun Winterton** attended the Annual PEET Conference and workshops in the US. In August **Glen Graham** and **Leon Scott** from the Centre for Identification and Diagnostics held their latest in the series of molecular diagnostic workshops: Application of molecular technology; genetic diversity, population genetics, and phylogenetics in plants and animals; which has been attended by Departmental students **Pat Bouchard** (PhD), **Shahana Salam** (Hons), **Dr Sarbjit Riyat**; **Dr Lois Small**, Dept of Primary Industries and

Fisheries, NT; Dr **John Alina** CSIRO, Cleveland; and **George Khaif**, Animal and Plant Health, Canberra.

Professor **Zuhair Al-Sharook** from Mosel University, Iraq is visited the Department in July and August to work with **David Merritt** and **Bronwyn Cribb** on the effect of azadirachtin (a Neem tree extract) on juvenile growth hormones in *Helicoverpa*. While in the Department, Zuhair has taken the opportunity to catch up with his past student and research assistant, **Eklash Jarjees** who is now working on her PhD studying interactions between *Trichogramma* and *Helicoverpa* and the implications for artificial diets with **David Merritt**.

Robin Giblin-Davis from University of Florida, Fort Lauderdale, USA visited **David Walter** and discussed Robin's fascinating studies of the use of the fergusoninid fly and its associated nematode in the control of *Melaleuca* in Florida.

The second edition of the Lucid CD, The Interactive Guide to the Australian Aquatic Invertebrates by CSIRO Entomology, has been released. A patch is also available that allows access to **Heather Proctors'** water mite key.

David Walter and **Heather Proctor** now have copies of their book, *Mites: Ecology, Evolution, and Behavior* published by UNSW Press.

Myron Zalucki has attended many workshops and meetings including a workshop on the diamond-back moth, *Plutella xylostella*, in Canberra and the Cambodia-IRRI-Australia Project (CIAP) in Phnom Penh where he also met with **Visarto Preap**.

Two students have started their Honours: **Mark Schutze** is working on a molecular phylogeny with **David Yeates**; and **Chris Gough** is studying the micro-hymenoptera *Coccophagus*, a mealybug parasitoid, with **Gimme Walters**.

A/Professor **Myron Zalucki** and PhD student **Wayne Rochester** visited Nanjing, China from 2-8 September. The Entomology Program and CTPM have been providing software, training and advice to a Nanjing Agricultural University project on *Heliothis* forecasting. The aim of the visit was to see how the project is progressing and to provide advice on problems and future directions. They visited Professor **Zhang Xiao-xi** at the Department of Plant Protection, Nanjing Agricultural University, Jiangsu Province. **Myron** also visited Professor **Liu Shu-sheng**, Department of Plant Protection, Zhejiang Agricultural University, Hangzhou Province.

David Yeates and **Glenn Graham** attended the Fourth annual Exotic Fruit Fly Symposium at UC Riverside, California from 11-16 September and then

traveled up to UC Berkeley to **Rosie Gillespie's** new lab.

Congratulations to **Andrew Loch** who was awarded his PhD for his thesis "*Host relationships and mating systems of Trissolcus basalis (Wollaston) (Hymenoptera: Scelionidae): Implications for biological control of the green vegetable bug*". Professor **Gordon Gordh** has been appointed as an Honorary Professor.

Claire Baker won the Honours talk at the ZEN postgraduate Conference and followed that up by winning the best student presentation at the AES Conference with a presentation on "A biological basis for management of glowworms (Diptera: Keroplatidae: *Archnocampa flava*) of ecotourism significance".

Dave Walter, **Dave Yeates**, **Myron Zalucki**, **Joan Bryan**, **Elizabeth Exley**, **Chris Lambkin**, **Claire Baker** and **Karen Bell** attended the 30th Annual General Meeting and Scientific Conference of the AES, held in Canberra. Besides Claire's win, **Chris Palmer** won the best Black and White photograph for "Setae of *Corops seminiger*".

Dr **Paul Cunningham** who is working on *Helicoverpa* oviposition behaviour and insect learning with **Myron Zalucki**, while on a Leverhulme Postdoctoral Fellowship from Edinburgh University, spoke to the Department on 8th October "Invaluable experiences? The importance of learning in *Helicoverpa*"

Queensland Institute of Medical Research

Dr **Dimitri Lvov**, Director of the D.I. Ivanovsky Institute of Virology in Moscow, visited QIMR in August and presented a very interesting talk on global migrations of animals and viruses'. While at QIMR, Dr. Lvov acknowledged **Brian Kay's** significant contribution to the field of virology by presenting him with the medal "100 years of Virology". This medal was jointly awarded by the Scientific Council of Virology of the Russian Academy of Medical Sciences and the Scientific Council of the D.I. Ivanovsky Institute of Virology. **Peter Ryan** will travel to Cairns at the end of October to attend a 2-day symposium on Dengue Management in north Queensland. Peter will present the findings of field studies conducted in north Queensland on the subterranean larval habitats of *Aedes aegypti*.

Brian Kay will travel to Geneva from 18-20 October to join the consultative committee on "Strengthening implementation of the global strategy for dengue fever/dengue haemorrhagic fever prevention & control" hosted by the Communicable Diseases

Prevention & Control Department, WHO. Brian will discuss 'Entomological surveillance: what to measure and how to interpret'.

The success of the community-based/biological control program against *Aedes aegypti* in Vietnam has resulted in AusAid agreeing to fund phase 2 of the project. Phase 2 will see the *Aedes aegypti* control campaign expand to include central and southern Vietnam. **Brian Kay** will travel to Vietnam from 27-31 October to discuss the planned expansion of the project with our collaborators in Vietnam.

Queensland Department of Natural Resources, Alan Fletcher Research Station

Michael Day and **Graham Teakle** have been travelling NSW and around south-east Qld releasing and monitoring *Aconophora compressa* on *Lantana camara*. The insect appeared to have established at five sites and is beginning to disperse.

Laurence Mound CSIRO, Canberra visited Michael at AFRS to look at thrips on *L. camara*. They also visited some field sites around Wivenhoe Dam and managed to find a new thrips inducing galls on a *Casuarina* species.

Graham Donnelly travels to Papua New Guinea in November to monitor progress with the ACIAR *Chromolaena* biological control project. He will meet up with Warea Orapa and Ingu Bofeng of NARI, Lae to discuss the project and travel to New Britain with Ingu to release insects and survey Siam weed.

Bill Palmer has been appointed the Principal Entomologist following **Rachel McFadyen's** move to management. In addition to his project involvement with prickly acacia and mother-of-millions, Bill now has responsibilities for the operation of the quarantine facility, the vetting of release applications and leadership of the biocontrol group.

Arne Witt, of the South African Field Station, made his first collecting trip to Madagascar to look for agents for mother-of-millions. The trip was very successful in that he was able to get permission to collect insects and ship them to South Africa. He was then accompanied on a field trip to southern Madagascar by local entomologist, **Jocelyn Rajaonarison**, where they found a number of promising species.

Hawaiian entomologist, **Mohsen Ramadan**, visited **Bill Palmer** and others at AFRS and **Arne Witt** in South Africa to discuss exploration for agents of fireweed in South Africa and Madagascar.

Wilmot Senaratne was appointed to a permanent experimentalist position to replace **Helen Nahrung**

who left earlier in the year. He continues with his work within the prickly acacia project.

Army Malaria Institute (AMI).

The arbovirus vector survey of Shoalwater Bay Training Area, north of Rockhampton continued with **Bob Cooper** and **Steve Frances** visiting the area for few days in September and October respectively. In early September, entomology technician **Kerryn Rowcliffe** returned to the institute following maternity leave.

Andrew van den Hurk, from the University of Queensland, visited in late June to pick up mosquitoes collected by the institute in Papua New Guinea, in April 1998. The mosquitoes are from several locations in Central and Milne Bay Provinces and will be examined for the presence of Flaviviruses, including Japanese Encephalitis Virus. Other visitors to the unit include Dr **John Walker**, from University of Sydney at Westmead and Dr **Paul Prociw**, University of Queensland, and Prof **Frank Fenner**, John Curtin Medical School.

Tony CLARKE
Regional Councillor

SOUTH AUSTRALIA

SA Museum

It's survey time again and members of the Entomology Section of the SA Museum are off in the bush, madly collecting. One trip is underway up to the Warburton River area and another is off to the Gammon Ranges with National Parks (DEHAA). **Chris Watts** and **Lynette Queale** are working on a list of insects which are easy to identify for these trips, so that some data can be compared. **Shelley Barker** and **Archie MacArthur** are meeting in W.A. for more collecting. **Bruce Halliday** (from ANIC) visited this week to look at the mite collection and Southcott material. He also gave Lynette Queale a crash course in mite identification!

The University of Adelaide

Dept. of Applied and Molecular Ecology

A horde of staff and students from the department (**Andy Austin**, **Vanessa Carne**, **Kaye Ferguson**, **John Jennings**, **Marta Kasper**, **Andy Reeson**, **Claire Stephens**) and **Glenys Wood** from SARDI attended the 30th AES AGM and Scientific Conference in Canberra. The two Andys, Marta, Glenys and **Dennis Hopkins** (SARDI) also attended the European Wasp Workshop.

SARDI Entomology

Glenys Wood and **Angela Lush** attended the annual Australian Entomological Society Conference. Angela presented a paper on the biology, ecology and control of the small brown snail in citrus orchards in south eastern Australia. Her work in this area is progressing with the hatching time of the snail in the field already being established. Glenys presented a paper on impact of toxic -baiting of European wasps in urban South Australia. This is part of a collaborative project with the University of Adelaide and the preliminary toxic-baiting results indicate that baiting is effective and warrants further investigation in the next season.

Greg Baker visited the USA and Sicily in August to discuss citrus IPM and citrus mealybug quarantine concerns, to hand deliver much needed supplies of Vic Bitter (VB) to John Curtis at Cornell University's Geneva campus and to test the Sicilian sense of humour with his faltering attempts to converse in pidgin Italian.

Peter Taverner and **Nancy Cunningham** attended the Australasian Postharvest Horticultural Conference in New Zealand. Peter gave a paper on the quarantine market access problems and important mould wastage issues associated with the Australian citrus exports to the USA. Nancy presented a poster on the effectiveness of sanitisers in controlling sour rot (*Geotrichium candidum*) in Navel oranges. The action of sanitisers is influenced by exposure time, pH, temperature and is dependent on their active ingredient.

Dennis Hopkins and **Glenys Wood**, visited Canberra CSIRO to attend a one-day research workshop on 'Biology and Management of European Wasps'. Participants from Australia and New Zealand met to share their expertise in European wasp management and ecology. Toxic-baiting and bait development research was presented and the availability of new potent, fast-acting pesticides have resulted in toxic-baits that may provide an effective and immediate wasp control option. Concerns were raised about the conservation impact of these introduced wasps, particularly in Tasmania and Victoria.

In October **Dennis Hopkins** attended the 7th Australasian Conference on Grassland Invertebrate Ecology in Perth and presented a paper on the release and establishment of *Mogulones larvatus* (Curculionidae: Coleoptera) as a biocontrol agent in the program for control of Patterson's curse in S.A. Also on the same project, **Ross Stanger** has completed the first major release of root feeding flea beetles *Longitarsus echii* in a field situation.

Three new faces have joined the Entomology Unit. **Susan Fuller** has started a small research project on small plague grasshopper. She will spend most of her time in the field around Ororoo and Hawker gathering data which will improve both the planning and operational efficiency of any future control programs aimed at this species. **Suzanne Charwart** has been appointed to work on white and conical snails over the next three and a half years. This project is supported by the Grain's Research and Development Corporation and the South Australian Grains Industry Trust Fund and is aimed at developing improved management practices for snails in cereals, pulses and canola. This project also involves the University of Adelaide, CSIRO Ento and PIRSA and private agronomists. **Bill Kimber** is working with Greg Baker on greenhouse whiteflies to determine the frequency of their resistance to two new neonicotinoid insecticides using bioassay techniques on whitefly populations throughout southern Australia.

Gabriella Caon has attended the annual meeting of The National Strategy for the management of Western Flower thrips and Tomato Spotted Wilt Virus at Knoxfield

Greg Baker and **Peter Taverner** travelled to Sydney to attend the Spray Oils Beyond 2000 - Sustainable Pest & Disease Management conference. Peter presented a paper on mode of action of oils, with particular reference to the "arcane" alkenes he has been studying for his PhD thesis.

John JENNINGS
Regional Councillor

TASMANIA

University of Tasmania

School of Ag. Science/CRC for Sustainable Production Forestry

Two entomology honours students **Sarah Campbell** and **Georgie Brown** have recently submitted their theses. Sarah was supervised by **Geoff Allen** and **John Ireson** (TIAR) and studied the comparative biology of strains of the gorse spider mite and Georgie (supervised by **Marina Hurley** and **David de Little** (North Forests)) studied melolonthine scarab beetles that are eucalypt seedling establishment pests. Travellers to the AES conference in Canberra, included **Zoltan Lukacs** (recently awarded his PhD on the phenology of Autumn Gum Moth), **Tara Simmul**, **Karina Potter**, **Helen Nahrung**, **Anthony Rice**, **Marina Hurley** and **Geoff Allen**. All caught up with the CSIRO Canberra node of the CRC, visiting **Martin Steinbauer**, **Rob**

Floyd and Martin's new experimental plantations, whilst Karina caught up with several of the CSIRO weed biocontrol group. **Geoff Allen** and **Anthony Rice** also took time out to visit ANIC and talk tachinids with **Don Colless** and view braconids and ichneumonids with **Stefan Schmidt**. The Hobart group also welcomed in October **Maree Yee** (from CSIRO Canberra biodiversity group) who is starting her PhD on insects and fungi associated with fallen logs in relation to forestry practices. **Tara Simmul** has suspended her 'near complete' PhD studies for 6 months and is working on a CRC-SPF project with **John Matthiesson** and **Marina Hurley** looking at eucalypt seedling establishment pests in Western Australia and Tasmania. Her WA leg of this project is now complete and new pest species identified. **Marina Hurley** is continuing her work looking at the impact of insect and vertebrate eucalypt seedling establishment pests with **Clare McArthur** (mammal ecologist). Many of the CRC-SPF entomologists were recently 'privileged' to witness a truly spectacular sawfly outbreak near Hobart and got some great photos and some research data! The CRC-SPF finished the process of its 2nd year research review, though we are still awaiting the committee's findings. Finally, the Ag. Science teaching and reference insect collection has just undergone a significant revamp and restoration (new cabinets etc), with **Judy Griggs** helping out magnificently with the process. We wish to encourage any entomology visitors to Tasmania interested in any taxonomic group to look over the collection during their trip.

School of Geography and Environmental Studies

Peter Mcquillan reports that he has been busy with many projects, including one on the insects associated with *Nothofagus* and that several of his students are nearing completion of their theses.

Tasmanian Institute of Agricultural Research (TIAR)

John Ireson (Newtown labs) has been on the weeds conference circuit, first in Montana in the USA at the 10th International Symposium on Biocontrol of Weeds and then soon after at the 12th Australian weeds conference in Hobart. Releases of the gorse spider mite throughout Tasmania, begun last year, continue, as do releases of plume moth against horehound. Research on the efficacy of ragwort flea beetle control is also ongoing with PhD student, **Karina Potter**, who also attended and presented a poster at the Hobart conference.

Tasmanian Museum and Art Gallery (TMAG)

Roger Buttermore has commenced his new HRDC project on bumblebees, with the first stage, organizing a national workshop on bumblebees, well underway. **Kaye Hergstrom** was recently appointed to assist with the running of this HRDC project. Roger just returned from attending the "Specialist Meeting on Insect Pollination in Glasshouses" in Soesterberg in the Netherlands. He also took time to visit Paul Schmid-Hempel's bumblebee ecology lab in Zurich, Switzerland. Paul visited Hobart earlier this year and together with Roger and **Geoff Allen** have been hatching ideas for funding some exciting ideas. **George Bornemissza's** first donation to the TMAG, a magnificent display of forest beetles highlighting size and intraspecific variation, has been receiving enthusiastic audiences and we all eagerly await further installments.

Department of Primary Industries, Water and the Environment

Margaret Williams reports no significant news on the quarantine front and no news from **Lionel Hill** at Devonport. Visits to the DPIWE collection recently have been by **Rolf Oberprieler** (from ANIC) looking at weevils, **Judy Griggs** to help sort out the Tas. Uni. collection, **Geoff Allen & Marina Hurley** with a group of students from Tas. Uni., **Kaye Hergstrom** (TMAG) looking at bees, Collegiate School grade 1 class (of most enthusiastic children!), and **Anthony Rice** a Uni. of Tas. Ph D student looking at Diptera. Work continues with databasing the collection, with Arthur Lea's non-Tasmanian collected insects now completed. On the 20th. September **Trevor Semmens** had his book "Lea's Legacy" launched by the (State) Minister of Primary Industries Water & Environment, Mr. David Llewellyn, at the Department's New Town Laboratory. This book details the history of the Department's collection which celebrates its centenary this year, having been started by the Government Entomologist Arthur Lea in 1899. Subsequent to this launch it was also launched in Adelaide on the 23rd. September at the Friends of the South Australian Museum Annual Meeting by Eric Matthews and on the 29th September at the Australian Entomological Society Conference in Canberra by Ebbe Nielsen.

Forestry Tasmania (FT)

Jane Elek was in Canberra for the AES conference and presented a paper detailing the results of the trap tree program for leaf beetles. Upon her return spent some time helping with the CRC-SPF's 2nd year review process. FT have also recently

completed a series of seven brochures detailing the biology and identification of seven of Tasmania's most significant forest pests.

Geoff R. ALLEN

Tasmanian Regional Councillor

VICTORIA

Institute of Sustainable Irrigated Agriculture, Tatura

Alex Il'ichev presented two papers at the XIVth International Plant Protection Congress, Jerusalem, Israel on "Wide Area Mating Disruption of Oriental Fruit Moth in Victoria, Australia" and "Behavioural adaptation of OFM under long term mating disruption". While in Israel, Alex visited the Volcani Plant Protection Centre to discuss future collaboration with ISIA Tatura.

Earlier in the year Alex visited **Dr. Max Suckling** at Hort-Research, Canterbury Centre, to examine the portable electrophysiological equipment. He also visited **Dr. Howard Wearing** at the Clyde Research Centre, to discuss mating disruption of Codling Moth in pome fruit.

Mofakhar Hossain participated in the 30th Australian Entomological Society AGM and Scientific Conference, Canberra. He gave an oral presentation on "Mass trapping and monitoring of *Carpophilus* Beetle during late summer: as an aspect of control strategy" and a poster "Success of wide area mating disruption of Oriental Fruit Moth in Victoria, Australia". **Cathy Mansfield** was invited by **Eleanor Melvin-Carter** and **Kim Bourke** of the Western Australian Department of Agriculture to discuss *Carpophilus* Beetle with researchers and growers. Cathy was particularly interested in the work **Stewart Learmonth** was doing to reduce insect pests in the orchard using birds. Cathy will also begin work on the IPM Fresh Market Tomato project this year. Recently the entomology team at Tatura has been planning experiments for the upcoming season.

Institute for Horticultural Development, Knoxfield

Peter Williams attended the Australasian Postharvest Horticultural Conference in Waitangi, New Zealand and presented a paper on "Postharvest control of insect pests of flowers and fruit using phosphine". After the conference Peter visited **Dr Alan Carpenter**, **Mr Kees van Epenhuijsen** and colleagues at the Crop and Food Research Institute, Palmerston North. Fumigation technology, control of western flower thrips, and

insect rearing and handling techniques were discussed.

Peter Williams and **Fouad Goubran** attended the National Postharvest Research Co-ordination Meeting on citrus held at CSIRO Plant Industries, Adelaide. The meeting agreed that Environmental issues, Disinfestation and Postharvest should be grouped together as a number 1 priority. **Mali Malipatil** attended the AES conference. **DeAnn Glenn** attended the International Plant Protection Conference in Jerusalem in July.

DeAnn Glenn and **Alison MacGregor** from the Sunraysia Horticulture Centre travelled to Western Australia to participate in IPM Viticulture: Research to Practice workshops. **Stewart Learmonth** and **Diana Fisher** gave presentations on the control of African Black Beetle, Garden Weevil and Mites in grapevines. Alison concentrated on Mealybug and biocontrol agents. DeAnn presented information on lightbrown apple moth and an introduction to the recent work on grapevine rust mite by PhD student **Martina Bernard**. **Nancy Endersby** was invited by **Rachel Lancaster** and **Françoise Berlandier** of Agriculture Western Australia to speak about diamondback moth at a cauliflower crop monitoring field day in Manjimup and a meeting in Perth. Nancy also caught up with **Stewart Learmonth** who showed her the impressive diamondback moth populations in cauliflower crops and weeds around the district.

Ron Stinner (Director, IPMNET, USA) and **Bob Sutherst** (CSIRO) presented a seminar at IHD on the development of a national IPM network on the internet. Ron serves as Principal Investigator for the (US) National IPM Network, a co-operative web-based delivery system involving 35 of the 50 US States. Bob is chairing the IPMNet Australasia Working Party.

DeAnn GLENN
Regional Councillor

INFORMATION REQUEST

Buzz Pollination

I am working on a plant species that is buzz pollinated. By this I mean that an insect buzzes near the anthers, which in turn vibrate releasing the pollen. I would like to get in contact with anyone else who is working with this type of pollination system or with anyone who has identified insects who use this behaviour. I can be contacted at: claireb@uow.edu.au or 02 4221 3013.

Cheers,
Claire Brown, PhD Candidate
Australian Flora and Fauna Research Centre,
University of Wollongong NSW 2522
ph 02 4221 4503 fax 02 4221 4153

COMING EVENTS

SYMPOSIUM ON INSECT-EUCALYPT INTERACTIONS

at
CSIRO Discovery Centre
Clunies-Ross St, Black Mt,
Canberra
7 & 8 February 2000 inc.

hosted by the
Co-operative Research Centre for Sustainable
Production Forestry
& CSIRO Entomology
http://www.ento.csiro.au/publicity/insects_euc/front.htm

This is a unique opportunity to hear invited international and national speakers present research findings and their thoughts on the significance of these topics to the sustainable production of eucalypts in Australia. Topics will include: "diversity & spatial patterns of forest insects", "genecology, resistance & vigour in eucalypts", "life-history theory & insect population dynamics" and "leaf attributes & their influence on insect folivores". Morning session topics will be used as the foci for small group discussions which will then be followed by plenary fora. Potential delegates are invited to present posters.

Cost: \$AUS200 (registration, morning & afternoon tea inc.) or \$AUS90 (student).

Further information:
Dr Martin Steinbauer
Ph (02) 6246 4090
Fax (02) 6246 4155
Email: Martin.Steinbauer@ento.csiro.au

Registration:
Jean Richmond
Ph (03) 6226 7947
Fax (03) 6226 7942
Email: jean.richmond@ffp.csiro.au

Australian Entomological Society 31st AGM and Scientific Conference June 2000 DARWIN, NT

Next year's annual meeting of the Society will be in Darwin during the last week of June. The organizing committee is seeking expressions of interest from potential symposium convenors. Symposia relating to the monsoonal tropics are especially invited but any topic is welcome. Potential symposium convenors will be responsible for soliciting papers and chairing their session and are asked to register their interest with symposium organiser Kristy Campbell at:

kcampbell@norgate.com.au.
Enquiries can be directed to:
Alan.Andersen@terc.csiro.au

UNE ASIA CENTRE INTERNATIONAL CONFERENCE Where Worlds Collide: Faunal and floral migrations and evolution in SE Asia-Australasia to be held at The University of New England, Armidale, Australia 29 November-1 December, 1999

Details: *Myrmecia* 35(2): 19-21
Contact:

A/Prof Ian Metcalfe
Convenor, Where Worlds Collide Conference
Asia Centre
University of New England
Armidale NSW 2351
AUSTRALIA
Tel & Fax: 61-2-67733934
Email: imetcalf@metz.une.edu.au

DAMPIER 300 **Biodiversity in Australia** **1699-1999 and beyond**

6 to 10 December 1999

Alexander Library Theatre, Perth Cultural
Centre, Francis Street
Perth, Western Australia

Organisers:

Australian Systematic Botany Society
Society of Australian Systematic Biologists
Invertebrate Biodiversity and Conservation

Details: *Myrmecia* 35(2): 21

For further information and for a registration
brochure, please contact:

Alex George, Kardinia

ph: (08) 9337 1655

fax: (08) 9337 9404

email: alextris@opera.iinet.net.au

Mark Harvey, Western Australian Museum

ph: (08) 9427 2737

fax: (08) 9427 2882

email: mark.harvey@museum.wa.gov.au

Jonathan Majer, Curtin University of Technology

ph: (08) 9266 7041

fax: (08) 9266 2495

email: imajerj@info.curtin.edu.au

We are pleased to announce that the website for
the conference has been updated. It now includes
the standard array of information, including
registration, a down-loadable registration form,
accommodation details, and a call for papers. The
site can be found at:

[http://www.museum.wa.gov.au/Dampier300/
Dampier300.htm](http://www.museum.wa.gov.au/Dampier300/Dampier300.htm)

We look forward to your registrations and
abstracts, and hope to see you all over here in Perth
in December.

Mark S. HARVEY

Arbovirus Research in Australia-8

Mosquito Control Association of Australia-4

Conference

3-7 July 2000

Couran Cove Ecotourism Resort

South Stradbroke Island

Gold Coast, Queensland

Registration forms are available from:

Michael Brown

QIMR,

PO Royal Brisbane Hospital, Qld 4029

Phone: [07] 3362-0352

Email: michaeBr@qimr.edu.au.



10TH INTERNATIONAL SYMPOSIUM **ON TRICHOPTERA** **Potsdam, Germany** **July 30 - August 5, 2000**

Details and application form can be obtained by
writing to:

Dr Arturs Neboiss

Dept of Entomology

Museum of Victoria

71 Victoria Crescent

Abbotsford, Vic 3067

SOUTHERN CONNECTION III **Lincoln University, New Zealand** **16-22 January 2000**

Details: *Myrmecia* 35(2): 22

<http://www.lincoln.ac.nz/cted/south/>

If you have any particular questions re Southern
Connection III, please contact:

Helen Shrewsbury

Centre for Continuing Education

Lincoln University, Canterbury, NZ

Tel: +(64)(3) 325 2811 ext 8955

Email: shrewsbh@tui.lincoln.ac.nz



XXI International Congress of Entomology **Iguassu Falls, Brazil** **20-26 August 2000**

Entomologists Preserving Biodiversity

Details: *Myrmecia* 34(1): 30-31.

CALL FOR PAPERS

We are now calling for papers for the XXI
International Congress of Entomology. The call will
be open from January 1st to December 31st, 1999.
Please refer to our homepage ([http://](http://www.igc2000.org)

www.embrapa.br/ice) for instructions to submit abstracts.

The organising committee should reply 15-30 days after you sent the abstracts. In case of no reply, please call us to verify whether your abstract was received.

If you need more information, please call ice@sercomtel.com.br

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**The New (XVIII) International Congress of
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